

Chemical Week

June 27, 1953

Price 35 cents



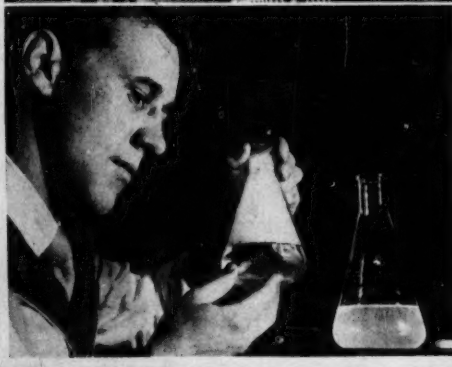
- Trend: courting your owners; now firms inject plenty of "sell" into stockholder meetings p. 16

Rare earth paint driers move in; they're not cheap, but special uses carve their niche p. 38



- Lederle's Entwistle: she puts the "OK, Buy" on \$500,000 a week of chemicals, equipment . . . p. 48

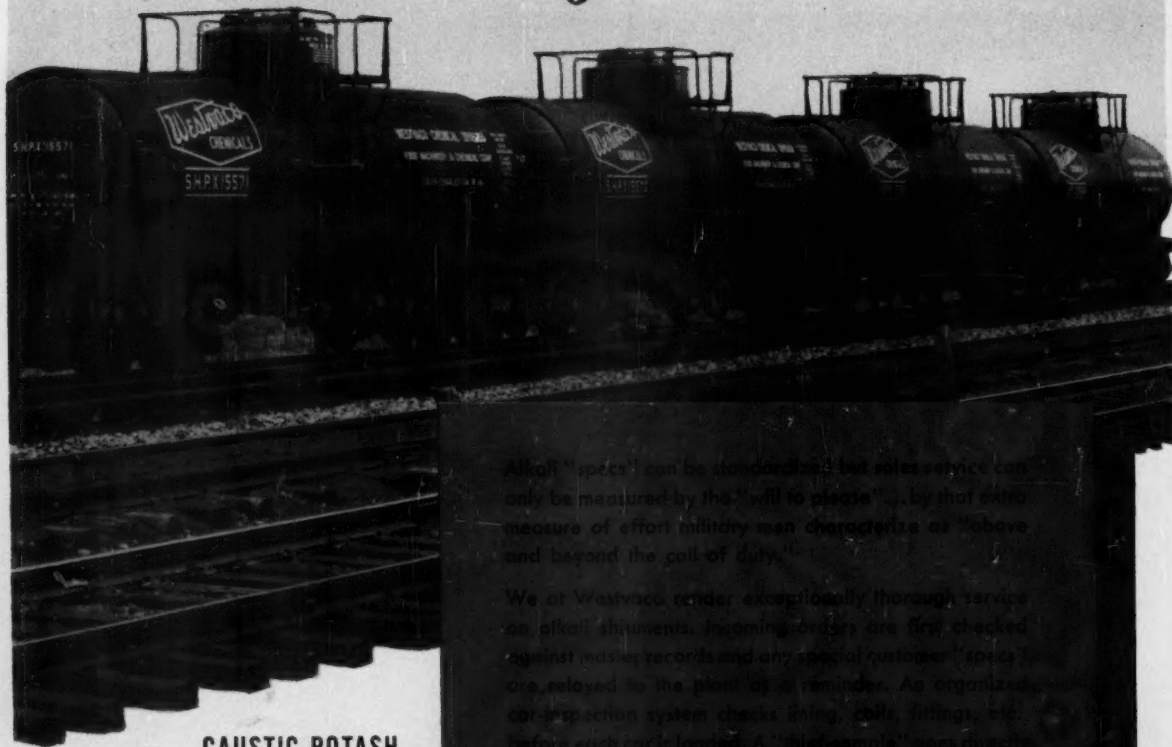
Here's a down-to-the-cells run-down of the nation's biggest caustic-chlorine area . . p. 58



- Here a drop, there a drop, but it all adds up to a rippling market for defoamers . . . p. 65

EVERY DELIVERY IS A

Special Delivery OF



CAUSTIC POTASH

45% Liquid
Flake and Solid

CAUSTIC SODA

Liquid 50%, Standard,
Low Iron and Rayon Grades
Liquid 70-73%,
Standard Low Iron Grade
Flake, Solid and Ground, 76% Na₂O

**NATURAL SODIUM
SESQUICARBONATE**

NATURAL SODA ASH
Light and Dense

REFINED SODA ASH
Light and Dense

**PHOSPHATED
CAUSTIC SODA**

Alkali "specs" can be standardized but sales service can only be measured by the "will to please" ... by that same measure of effort military men characterize as "above and beyond the call of duty."

We at Westvaco render exceptionally thorough service on alkali shipments. Incoming orders are first checked against master records and any special customer "specs" are relayed to the plant as a reminder. An organized car-inspection system checks lining, bolts, fittings, etc. before each car is loaded. A "file-sample" goes directly to the plant lab for check-analyses. Same-day notification of shipping date, car number and routing goes forward by postcard or telegram. Run sheets are expediently checked from function to function. In summary, alert Traffic Men.

Totally, we not only make high-quality alkalis but we also follow through with quick-answers, delivery dates and practical technical help in handling and use. Think you'll like Westvaco's "special delivery" of "small customer" service? Write for company literature. May we quote data for some of your needs?



WESTVACO CHEMICAL DIVISION

FOOD MACHINERY AND CHEMICAL CORPORATION

GENERAL OFFICES • 161 EAST 42nd STREET, NEW YORK 17

CHICAGO, ILL. • CINCINNATI, OHIO • CHARLOTTE, N. C. • DENVER, COLO.

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Chemical Week

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Power Stainless Products Co.

**Most
COMPLETE
STOCK OF**

**Stainless
STEEL PRODUCTS**

When you deal with Power, you're always sure of getting any stainless item anytime—because Power carries the most complete stock anywhere.

PIPE

Stainless • Aluminum • Soran
Fabricated to your requirements

VALVES

Stainless • Aluminum • Nickel • Lead • Monel
Featuring Stainless Steel Screwed and Flanged Valves

FITTINGS

Stainless • Aluminum • Soran
Featuring the Quality Lines — Comco
Stainless Steel Screwed, Flanged and
Welding Fittings ...
Triclover Zephyrweld Fittings

TUBING

Stainless • Aluminum • Soran
Featuring—Stainless Tubing in all gauges
and sizes

Speedy Delivery Everywhere!

**"Specialists in Corrosion
Resistant Materials"**

POWER
STAINLESS PRODUCTS CO.
330 HARRISON ST. PASSAIC, N. J.

When a raincoat sheds water like a duck's back



U·S·S COAL CHEMICALS

are in the picture

● Today's rainwear is smart and good-looking, yet it sheds water like the proverbial duck's back. The water repellants with which fabrics can be treated are another outstanding achievement of the chemical industry.

An important ingredient in the manufacture of these water repellants is U·S·S Pyridine, one of the line of U·S·S Coal Chemicals. Other basic Coal Chemicals produced by United States Steel include Benzol, Toluol, Xylol, Phenol, Cresols, Cresylic Acid, Naphthalene, Picoline, Creosote Oil and Ammonium Sulphate.

For complete information on these U·S·S Coal Chemicals, contact our nearest Coal Chemical sales office or write directly to United States Steel Corporation, 525 William Penn Place, Pittsburgh 30, Pennsylvania.

U·S·S COAL CHEMICALS



UNITED STATES STEEL

2-952

OPINION....

Hard to Believe

TO THE EDITOR: In your news article "More Salesmen, More Sizzle" (June 6) you point out that many companies and sales managers bemoan the fact that it is "tough to find the dual man—technically trained with sales savvy."

Personally, I find this a little hard to believe. It has been my experience that reputable companies are not seeking these good men from outside their immediate organizations . . . fly-by-night outfits are not willing to offer any decent compensation . . .

I am aware of several good men, myself included, that are ready, eager, capable and willing to do an excellent job of selling chemicals . . . but are having considerable difficulty in making proper contacts to consummate a mutually advantageous affiliation . . .

. . . Are the companies you contacted in your survey in earnest or merely adding more "idle rumors" to confuse your readers and the chemical industry? . . .

NAME WITHHELD

Hard to believe it may be, but CW's nationwide survey, wherein we chatted with several dozen sales executives, convinced us that they are earnestly and diligently scouting for men.—Ed.

Definite and Unfair?

TO THE EDITOR: It was because I thought I could get a fair expression of conditions in the chemical field that I subscribed to CW.

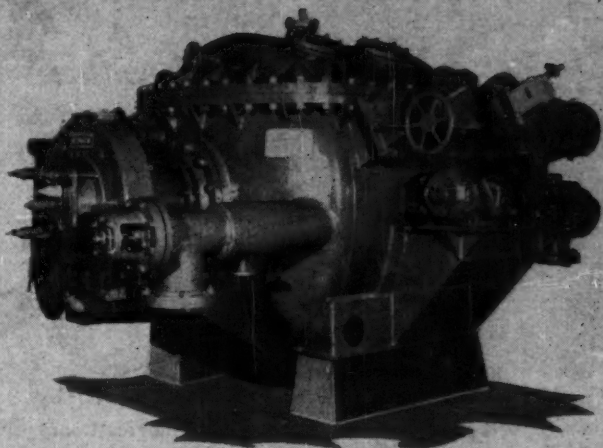
I was much surprised to note in your current Newsletter (May 23) and in your news article (p. 76) what appears to me to be a definite and unfair stand against the interests of the chlorophyll industry. I am not employed in this industry nor am I a stockholder in it but I have watched the development of chlorophyll distribution with much interest . . .

You quote Dr. Hillenbrand as saying, "There is no miraculous green, white, red or any other color toothpaste that will magically prevent tooth decay." I have yet to see or hear of any manufacturer who remotely claimed that his toothpaste was "miracu-

CW welcomes expressions of opinion from readers. The only requirements: that they be pertinent, as brief as possible.

Address all correspondence to: W. A. Jordan, Chemical Week, 330 W. 42nd St., New York 36, N.Y.

CONTINUOUS PRESSURE FILTERS



Showing one of Eimco's newest pressure filters equipped for dewatering and washing with automatic precision scraper blade advancing mechanisms.

Every Eimco Filter for vacuum or pressure operation, or combination of the two, is a custom built machine designed and constructed to meet the specific requirements of your process.

The machine pictured above is another typical example of Eimco custom built filter design. This filter is part of the flow sheet in a plant producing phenol, acetone and alphas-methyl styrene. The purpose of the filter is to remove sodium crystals and small amounts of water and it was also necessary that the phenol in precoat cake be reduced to .05% washing with crude acetone and separating the strong and weak filtrates.

Eimco's testing and developing departments are staffed with experienced chemical and metallurgical engineers whose work with consulting engineering firms and the engineering departments of many producing companies has resulted in economies in operation and production of their product.

May we have an opportunity to consult with you and quote on your filter requirements?

EIMCO

4436

THE EIMCO CORPORATION

The World's Leading Manufacturer of Vacuum Filtration Equipment
EXECUTIVE OFFICES AND FACTORIES: SALT LAKE CITY 10, UTAH, U. S. A.

BRANCH SALES AND SERVICE OFFICES:

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IN ITALY, EIMCO ITALIA S.p.A., MILAN, ITALY



*An AMERICAN Price Paid For
An AMERICAN Product
Supports the AMERICAN
Standard of Living*

Many persuasive arguments are advanced by importers to induce purchase by American consumers of materials manufactured abroad. Not the least of these is a low price. The approach is often opportunistic. The continuity of supply may be tenuous.

Thoughtful and substantial American Business is carefully considering just how far, if at all, it can safely introduce foreign materials into its stream of supply without endangering the welfare of its American suppliers. To our many friends who regard principle above casual opportunity, we cordially express our high esteem . . . and pledge our continued best efforts to serve faithfully.

BENZOL PRODUCTS COMPANY
237 SOUTH STREET, NEWARK 5, N. J.

Established
1926

OPINION

lous" or that it would "magically prevent tooth decay." In my humble opinion such language would not be permitted in the advertising copy accepted by any responsible periodical . . .

Therefore, I would like to ask Dr. Hillenbrand, Where did he ever see such a claim advertised? No advertiser of any toothpaste, so far as I know, ever claimed that the use of his product would "take the place of normal dental care" . . .

The implication of your paragraph is that someone has made these ridiculous claims or promises on behalf of some toothpaste because it contained chlorophyll. I seriously doubt it. One way to injure a product is to make its sponsors appear *ridiculous* or *insincere*. For some reason that, as a satisfied user of chlorophyll toothpaste, I do not understand, you have elected to make the sponsors of chlorophyll in toothpaste appear ridiculous. Why?

As for accusing them of insincerity, that is clearly shown by the paragraph on p. 76 which is described as a typical comment of ad-industry executives regarding the use of the word "chlorophyll" in next year's advertising: "Why not? Some dopes still believe in Santa Claus." . . .

Sincerity is the permanent foundation of successful advertising. I don't believe that responsible agencies would accept chlorophyll-based advertising business if they thought its claims were false.

The value of chlorophyll in dentistry has been pointed out by dentists from Temple University, Philadelphia, and the beneficial results of its use are described in well-known technical literature.

Why have you given this obviously unfair slant to your news about the new chlorophyll industry?

WILLIS G. WALDO
Consulting Engineer
Palm Beach, Fla.

CW respects your opinions, Reader Waldo, although we do not agree with them on several scores, and certainly we deny that we "slanted" the news:

Both the items cited were quotes, and Dr. Hillenbrand's remarks were prefaced by this CW statement: "Skeptics had their innings this week." That said, plainly, "This is an opinion" —and the opinion was cited in quotation marks.

Too, apart from the "Santa Claus" comment, we also quoted this remark of another ad man: "Unless manufacturers of chlorophyll products do something in the way of research to support the many claims, I look for



For Example:

NOPCO* DISPERSING AGENTS prevent coagulation of materials that impair quality

A prime source of grief during many processing operations is the agglomeration or massing together of tiny particles of material. For instance, pitch, liberated during the production of pulp for paper, later tends to coagulate and accumulate on the paper making equipment. This not only decreases the efficiency of the paper making machines, but causes "spotting" and weak areas in the paper itself. Result: Rejects and down-time for cleanup, both of which are costly.

To prevent destructive coagulation of pitch in the processing of pulp and paper, Nopco has developed a very efficient dispersing agent. Small amounts of Nopco 1187-X introduced into the paper stock preparation system, at any point prior to the paper machine screens, assure thorough

dispersal of pitch particles—prevent flocculation or agglomeration.

In the textile field, too, surface active agents play an important role—particularly in dyeing where evenness of shade is obtained by a controlled uniform exhaustion of the dyestuff from the bath. Nopco 1425-B is a "levelling" assistant for use on yarns or piece goods. It assures perfect reception of the dye by the fiber thus aiding in the production of uniform color from batch to batch.

A Nopco dispersing agent, or some other Nopco chemical, may provide the answer to a major production problem *you* wish solved. We'll be glad to work closely with you, and help you achieve just the results you are looking for.

*Reg. U. S. Pat. Off.

Outstanding NOPCO Processing Chemicals include:

EMULSIFIERS • LUBRICANTS
PLASTICIZERS • SIZES • DETERGENTS
DISPERSING AGENTS • METALLIC SOAPS
SURFACE TENSION REDUCING AGENTS
DEFOAMERS

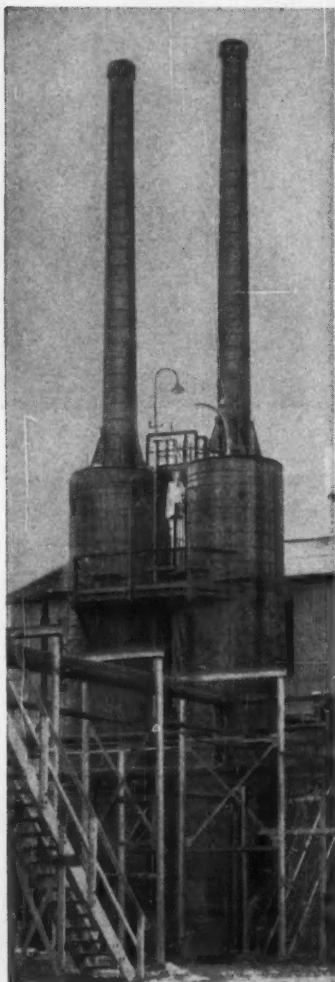


NOPCO

CHEMICAL COMPANY (Dept. CW) Harrison, N. J.

Branches: Boston • Chicago • Cedarhurst, N. Y. • Richmond, Calif.

SANTA FE TANK & TOWER COMPANY OFFERS A SPECIALIZED ENGINEERING SERVICE



A part of a battery of scrubbers and fume stacks in a large chemical plant to remove acid fumes and recover by-products.

Los Angeles, California...Throughout the nation a problem exists...the removal of acid fumes and dust that is emitted from many industrial plants. Engineering firms are constantly being asked to design processes for their removal or recovery.

The Santa Fe Tank & Tower Company, specialists in the field of structural design, fabrication and installation of these units, is cooperating with basic engineering companies to help to effectively cope with this problem.

An example of cooperative endeavor is illustrated here by a chemical plant project directed by The Ralph M. Parsons Company. The Santa Fe Tank & Tower Company cooperated with this internationally known engineering firm in determining the proper materials to be used...and to structurally design, fabricate and erect this battery of scrubbers. As a result of this cooperative effort, the ultimate customer, as well as the community surrounding the plant, was best served.

Serving practically all industries, the Santa Fe Tank & Tower Company is probably the most dependable source for these specialized washer installations. Santa Fe offers this specialized service to engineers.

Santa Fe maintains branch offices in all principal cities. For complete information and engineering data on Wood Pipe, Wood Tanks, Cylindrical Gas Scrubbers, Cooling Towers, and other wood specialties, write to Santa Fe Tank & Tower Company, 5401 So. Boyle Avenue, Los Angeles 58, California.

OPINION

the product to be seriously discredited within a year. Many scientists of note are challenging right now, as we all know."

We expressed our own opinions on the subject in an editorial (Aug. 16):

"We are not saying that chlorophyll has no merit whatsoever. It may, in some cases, have some worth. But there is, certainly, every reason to question whether it is a wondrous cure-all applicable to any and all uses that anyone may dream up.

"Most advertisements, of course, are deftly phrased to leave an impression but concocted so that statements do not, in themselves, run afoul of the FTC.

"In the long-term interest of the industry...we must approach the problem soberly. Either we must police ourselves—or invite policing. As it stands today, we are, unfortunately, issuing that invitation."—Ed.

Get-Together at RPI

TO THE EDITOR: You did an excellent job of reporting on the Industrial Council meeting at Rensselaer ("Uphill to Understanding", May 30)...

I agree with you that this was an excellent start—but only a start—in public education...

HOWARD HUSTON
Vice-President
American Cyanamid Co.
New York, N. Y.

TO THE EDITOR: ... Since the meeting at Troy, I have talked with a number of the people who were there and the feeling was unanimous that meetings of this kind do a tremendous amount of good, and a great deal more of this work should be done.

There was some expression, with which I agree, that meetings of this kind could also be held on a regional basis.

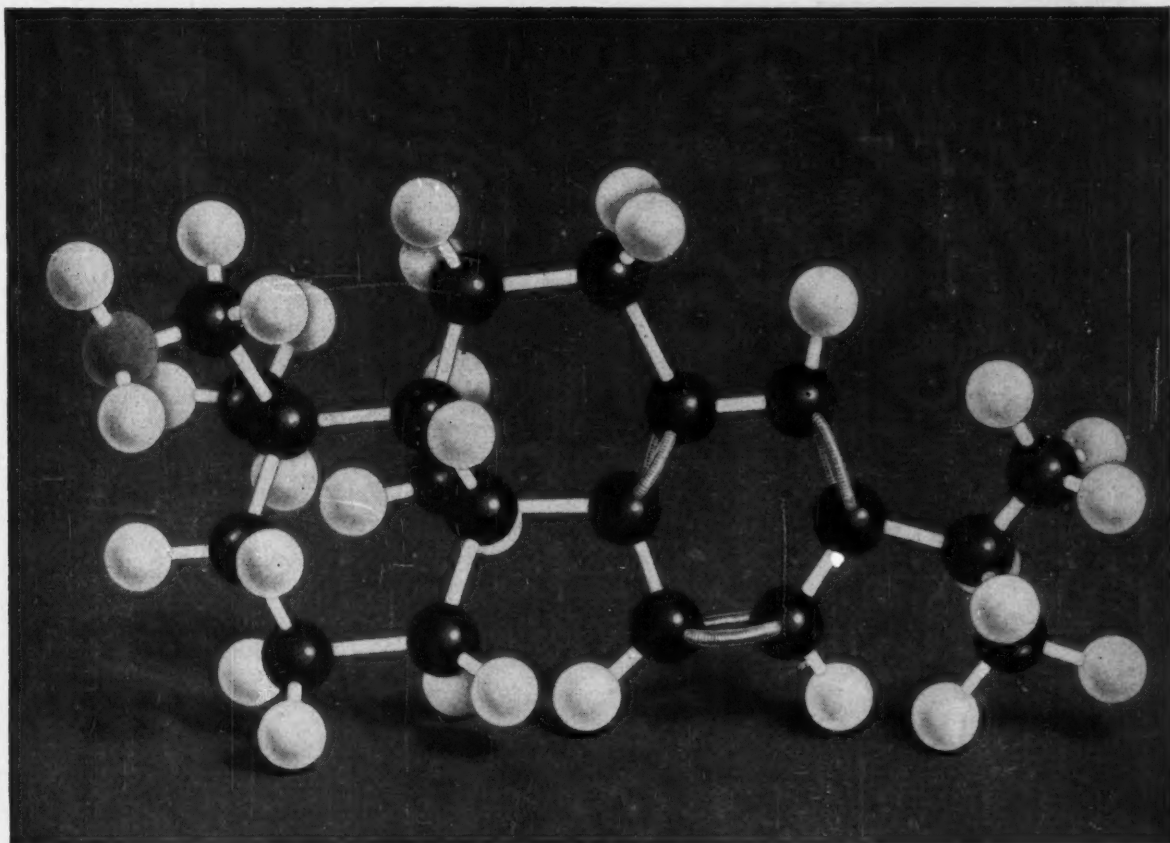
I really feel that something should be done to continue this type of work...

P. M. DINKINS
President
Jefferson Chemical Co. Inc.
New York, N. Y.

TO THE EDITOR: ... I especially liked the emphasis you put on the process of clarification in your report of the Industrial Council meeting at Rensselaer...

Here is a suggestion: Would it be possible...for some chemical industry representatives to meet individually with a few of their local teachers who attended the conference?

Such conferences held locally in



ROSIN AMINE CAN MEAN BETTER PRODUCTS FOR YOU

Hercules* Rosin Amine D is a challenging new primary amine made from specially treated rosin. The reactivity and useful properties of this versatile amine have led to its rapid growth and wide acceptance by many industries.

Places where Rosin Amine D or its derivatives can be used successfully include asphalt, biological growth control, corrosion inhibitors, emulsifiers, flotation agents, inks, paints, varnishes, rubber, and in textile processing.

Some of the known reactions of Rosin Amine D and its derivatives, helpful to you in exploring these new materials, are included in a recent book. Send for your copy today.

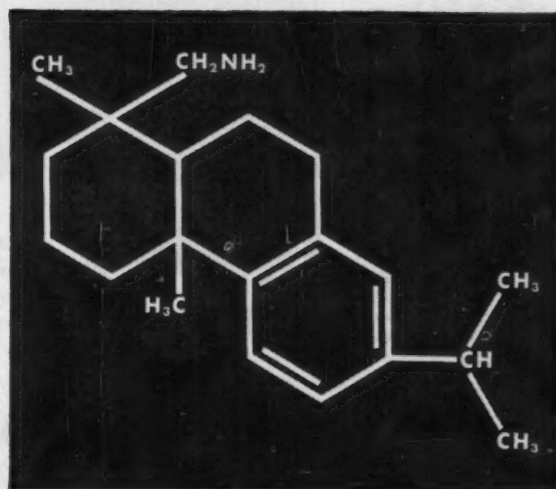


*TRADE MARK

Naval Stores Department

HERCULES POWDER COMPANY

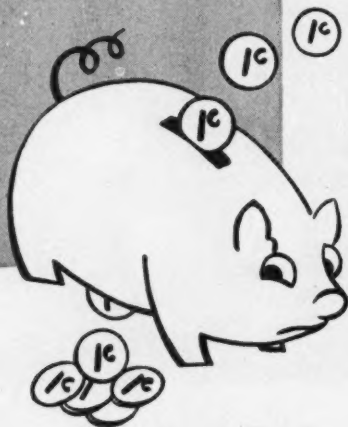
992 Market St., Wilmington 99, Del.



Hercules Rosin Amine D is a technical grade of dehydroabietylamine. It is an amber, viscous liquid essentially insoluble in water but soluble in most organic solvents.

GC53-4

Pennies saved are not always pennies earned



AIR CONDITIONING AND CLEANING EQUIPMENT
Full lines of industrial air cleaning equipment for gases and fumes, as well as air washers and cabinets for air conditioning.

VENTILATING FANS
Complete lines, the Jubilee Breeze, an efficient disk fan — the "LL", a non-overloading centrifugal — the Axial Flow, and many others for all services including forced and induced draft fans.

"Buffalo" Engineering Sales Representatives in all principal cities are anxious to work with you . . . Call on them for advice without obligation.



**The "Q" Factor — The built-in quality which provides trouble-free satisfaction and long life.*

BUFFALO FORGE COMPANY

148 MORTIMER ST.

First For
Fans

BUFFALO, NEW YORK

PUBLISHERS OF "FAN ENGINEERING" HANDBOOK

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

Sales Representatives in all Principal Cities

PANEL BREEZE FANS BELTED VENT SETS BELT-AIR FANS
BREEZ-AIR ATTIC FANS "L" BREEZE FANS "NV" BREEZE FANS

Take the case of the man who saved a few dollars on air handling equipment, which he expected to use for many years. Installation costs turned out to be high and maintenance expense excessive — more than he saved on original purchase price. Of course, not every low bidder has an inferior product; but you can be sure of one thing: if a high quality product is to meet all low bids, the quality just can't stay high!

We at "Buffalo", with seventy-five years of top quality manufacturing behind us, call your attention to the "Q" Factor.* Without it we could not have maintained the performance records chalked up in many of America's outstanding industrial plants. We have no intention of abandoning the practice of building the best possible product and pricing it afterwards.

OPINION

communities where the industry is located would be very inexpensive. Moreover, the teachers would feel freer about stating opinions in such smaller groups . . .

MILDRED V. FORD
Bennett High School
Buffalo, N. Y.

TO THE EDITOR: . . . We have read the news article in CW on our Industrial Council meetings . . . it was most thorough and constructive . . .

We hope that your reporting will be of value within the chemical industry as well as to ourselves . . .

LIVINGSTON W. HOUSTON
President
Rensselaer Polytechnic Institute
Troy, N. Y.

Buyer-Centered Sellers

TO THE EDITOR: The excellent news article "More Salesmen, More Sizzle" — (June 6) has impressed us deeply. With a young, postwar sales force, we share the problem of making our men become "buyer-centered" and not "buyer-spoiled." . . .

"More Salesmen, More Sizzle" will help provide the stimulus that salesmen need and seek. Keep these articles coming . . .

K. B. COVERT
Sales Manager
Fire Equipment Div.
Ansul Chemical Co.
Marinette, Wis.

Foamy Green

TO THE EDITOR: . . . Perhaps because I think you hate chlorophyll and such gimmicks . . . I thought you might be interested in the enclosed ads from the *Chicago Daily News* . . .

I suppose a typesetter got things mixed . . . but it is peculiar to see the chlorophyll toothpaste touted as "lanolized—kind to the skin" . . . and the shave cream as "clear green—no stain" . . .

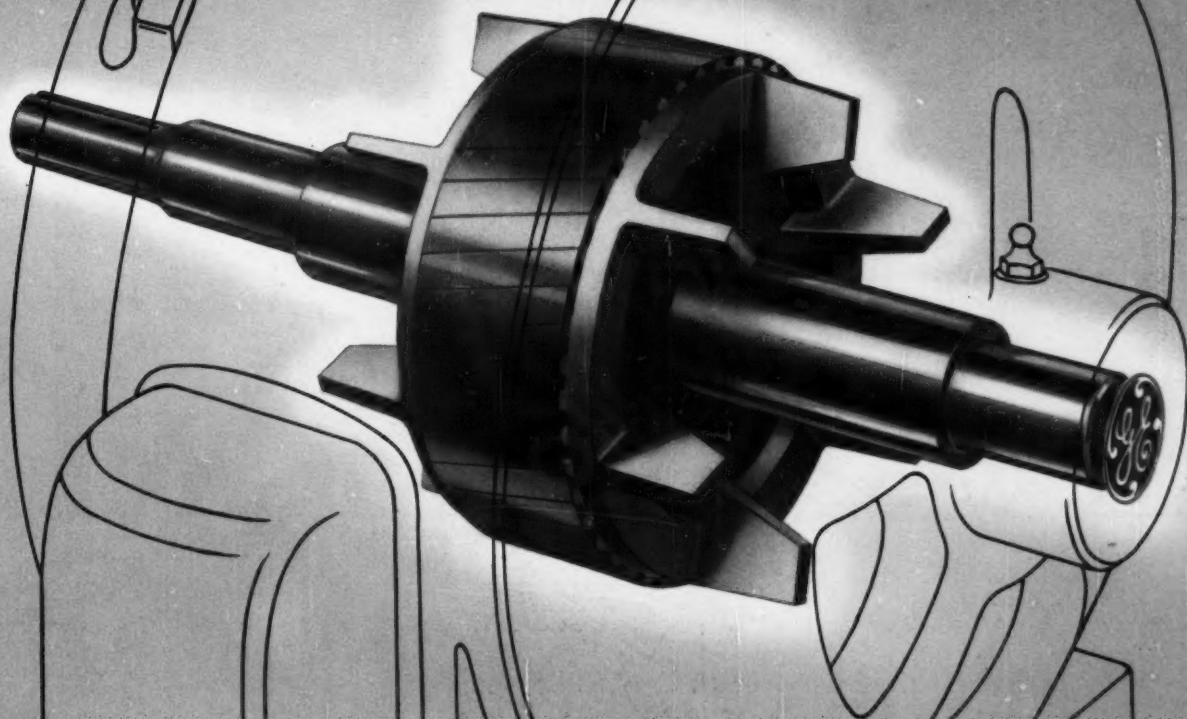
I'm in a green froth—lanolized . . .

CHAS. F. BERNARD
Chicago, Ill.

Sound Approach

TO THE EDITOR: . . . We feel that your news article "Outlook for the Oxide" (May 23) is well prepared . . . a sound analytical approach to current questions on direct oxidation vs chlorhydrin . . .

R. KATZEN
Manager
Vulcan Engineering Div.
Vulcan Copper and Supply Co.
Cincinnati, O.



Why rotors don't fail in G-E **TRI/CLAD** motors

BEG. U.S. PAT. OFF.

G-E pioneering and research developed and produced this one piece cast-aluminum rotor winding, which has virtually eliminated rotor failures in Tri-Clad motors.

Rotor is indestructible in service because the bars, end rings, and fans are a "one-piece" casting. No brazed joints, no fabricated fans to come apart.

Rotor inertia is reduced by the lightness of the aluminum, thus raising efficiency and allowing easier starting, stopping and reversing.

Rotor efficiency is higher, operating losses reduced, as the result of a special chemical treatment.

The motor runs cooler because the integrally cast fans dissipate heat faster.

Operation is smooth and quiet due to the dynamic balancing of the rotor which also reduces bearing wear and material fatigue.

Long rotor life is one more reason why G-E Tri-Clad motors last longer — give you more reliable service and greater operating economy.

Order Tri-Clad motors today from your nearby G-E representative. You'll find popular models in stock. General Electric Co., Schenectady 5, N. Y.

752-20

You can put your confidence in —
GENERAL  ELECTRIC



Unlimited Capabilities

The Magi of old were held in great esteem because they were thought to have unlimited powers over all the forces of nature. They were the "good" magicians. Their opposites, sorcerers who practiced black magic, were believed to have power only over the forces of evil.

Like the Magi of old, Allyl Chloride offers unlimited capabilities for "good" in many fields. It is the key to Shell's synthetic glycerine, to Epon® resins, and other important products in the resin and plastics fields. It is an intermediate in the production of pharmaceuticals, insecticides and dyestuffs.

Allyl Chloride has many other interesting possibilities for new products . . . possibilities that await only your exploration.

Allyl Chloride

Send your letterhead request for a copy of *Allyl Chloride* — a 136-page clothbound book of reactions and properties.

SHELL CHEMICAL CORPORATION

CHEMICAL PARTNER OF INDUSTRY AND AGRICULTURE

Eastern Division: 500 Fifth Avenue, New York 36. Western Division: 100 Bush Street, San Francisco 6
Atlanta • Boston • Chicago • Cleveland • Detroit • Houston • Los Angeles • Newark • St. Louis
IN CANADA: Chemical Division, Shell Oil Company of Canada, Limited • Montreal • Toronto • Vancouver



NEWSLETTER

A dozen Niagara Falls firms—all large users of electricity—are out to thwart Gov. Thomas E. Dewey in his attempt to socialize water resources there by authorizing the state to develop additional power from the Niagara River.

The twelve, which include Hooker, Mathieson, Niagara Alkali, Oldbury and Stauffer, have issued a ten-page memorandum advocating development by private utilities. Their four major arguments: the utilities have a history of reliability; they're ready to start construction right now; they pay taxes; and new facilities could be integrated easily into their existing power lines.

Dewey himself has been sent a copy, as well as various congressmen who are members of pertinent House and Senate committees.

Revived interest on the part of American chemical makers in German technology reports (see p. 26) has galvanized the Dept. of Commerce's Office of Technical Services into new undertakings. It is now preparing a number of bibliographies to give industry a better picture of what's available. Last month's reports dealt with photographic chemicals and emulsions, and just last week OTS brought out reference lists on hydrazine hydrate and formaldehyde.

Also, at least one government laboratory, the Navy Engineering Experiment Station at Annapolis, is going to do something about its report writing. It's starting a 15-session technical writing course this summer for some 250 project engineers and supervisors. Reason: top officials, who have to o.k. the reports, now have to spend too much time understanding and editing them.

Dow Chemical and the government—i.e., General Services Administration—have signed a one-year contract starting July 1 providing for continued operation of the government-owned magnesium plant at Velasco, Tex. The contract is renewable, and Dow says it expects to renew next year.

Six of the seven government-owned plants were reactivated after the Korean invasion, but only the Velasco plant will run next year.

In a separate agreement the government modified its policy on marketing the metal. Heretofore it has taken all the magnesium, kept what it needed and sold the rest. From now on it will take only what it needs, and Dow will sell the remainder through its normal channels.

Another government-sponsored project is going less smoothly: Carthage Hydrocol, Brownsville, Tex., is shutting down for repairs. Construction of the multimillion-dollar gasoline-from-natural-gas plant was largely financed by Reconstruction Finance Corp.

Because of technical "bugs," the plant has never reached full-scale production in the three years since it was completed. It was designed to convert 90 million cu. ft./day of natural gas into 6,000 bbls. of gasoline and 900 bbls. of diesel fuel, together with by-product chemicals.

Immediately affected are 430 laid-off employees; also involved are the Brownsville plants of Stanolind and U. S. Industrial Chemicals, which utilize Carthage Hydrocol by-products in their operations. The plant will be closed for at least three months—and likely much longer.

In recent years it's been easy for chemical firms to run afoul of the Federal Trade Commission, even though trying to steer a strictly legal course. But last week the new FTC chairman, Edward F. Howrey, revealed how he will recast the agency's antitrust policy. The new goal: "compliance, not punishment."

The chemical marketing executive concerned with prices, advertising, and other matters in FTC's domain will be dealing with a more co-operative agency, whose emphasis will be on advisory consultation and voluntary compliance instead of rash litigation. Business realities rather than unyielding legalism will, says Howrey, govern FTC's enforcement policies. Here's how he proposes to do it:

- Create a bureau of consultation within FTC to quell unfair and deceptive practices by fostering voluntary compliance;
- Work out yardsticks acceptable both to FTC and industry to measure distribution costs, thus provide a reasonable basis for judging alleged price discrimination under the Robinson-Patman Act;
- Beef up the industrial economics bureau so that economic questions will get proper consideration in antimonopoly cases. FTC's economic advisers will be given the same status as its legal advisers.

In another far-reaching action Howrey put FTC on record as accepting in price discrimination actions a seller's defense that he met a competitor's price in good faith. He also believes it's legal for a seller to absorb freight charges in order to meet competition.

Is Rystan's chlorophyll patent valid? Colgate-Palmolive-Peet doesn't think so, is marshaling its legal artillery to push its contention. It will continue to make its chlorophyll toothpaste after its licensing agreement with Rystan ends July 28; and rather than waiting for Rystan to file an infringement suit, it has already filed a civil suit asking that the patent (No. 2,120,667) be declared invalid and void.

Colgate contends that the patent is "vague and indefinite"; its disclosures "incomplete"; and "not broad enough to include plaintiff's product." Citing chlorophyll literature dating back to 1912, Colgate claims the patent shouldn't have been granted because "no invention was required to devise the alleged improvements described therein."

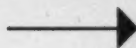
Research, exports and the atom are areas in which major activity by three different firms are newsworthy:

- American Cyanamid brought Calco's A. L. Peiker to Stamford to direct and coordinate 14 research and development groups working on its new acrylonitrile fiber, X-51. It has optioned three possible plant sites and is considering several others. It hasn't decided whether to proceed with the fiber, but will move fast if and when the go-ahead is given.
- Warner-Hudnut's export sales of pharmaceuticals and cosmetics has grown to the point (over \$27 million last year) where it is reorganizing its foreign business into three geographical divisions—British Commonwealth and Far Eastern, Latin American, and European.
- Kaiser Engineers (division of Henry J. Kaiser Co.) has set up a group to explore atomic energy. It may try to join up with one of the existing industrial power teams (CW, June 6), or set up a new team to develop industrial uses of fission products.

Here's one way to use MCA's Facts Book (CW, May 30): The Chemical Industries Section of the San Francisco Chamber of Commerce is ponying up the money to send about 450 copies to high schools and junior colleges throughout northern California. They'll be mailed this month.

... The Editors

This Model is nice to have around



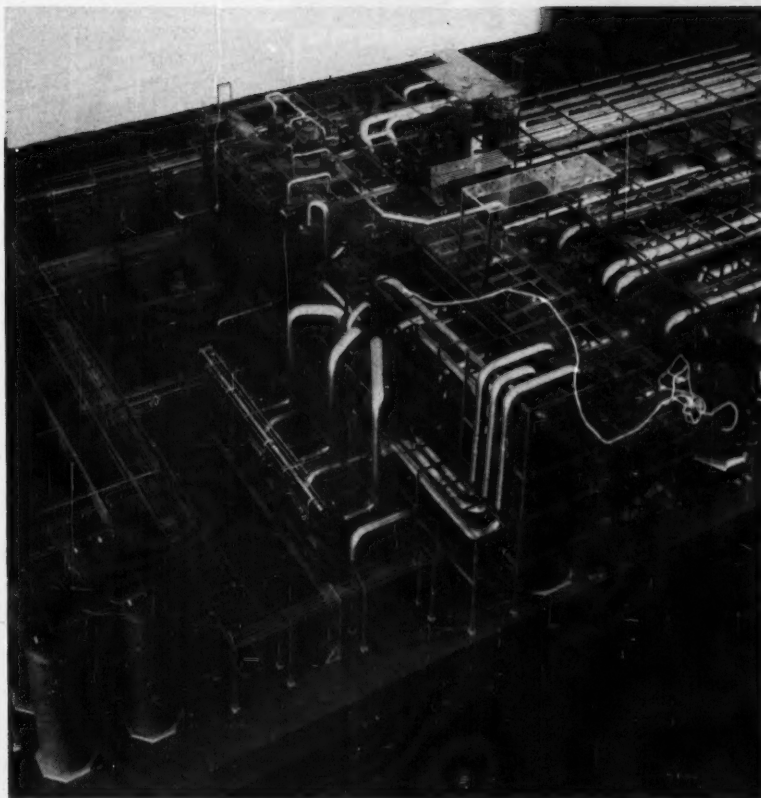
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Shown here is a model of
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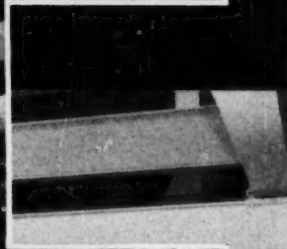
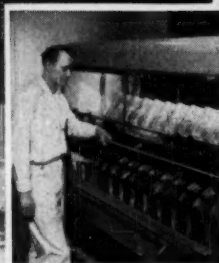
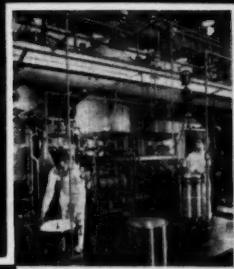
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how Abbott
kills bacteria



in **GRAVER**-built stainless sterilizers

Graver recently fabricated four solid stainless steel autoclaves for use by Abbott in a steam sterilization process at their North Chicago Laboratories. Thousands of bottles of precious intravenous solutions are placed in these cylinders at one time and subjected to bacteria-killing heat. This operation represents an important step in Abbott's scientifically controlled sterilization process...designed to protect the consumer at all stages of manufacture.

The sterilizers, 22' long, were designed in accordance with ASME Codes to withstand a working pressure of 50 psi. Graver built them for the Adamson United Company, original contractors for the project and suppliers of the patented doors with which the sterilizers are equipped. These sterilizers are an example of the painstaking care in precision fabrication that has contributed much to Graver's reputation.

GRAVER

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Process Vessels

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BUSINESS & INDUSTRY . . .

TVA—The Status is Quo

The Tennessee Valley Authority, which for many years has attracted many chemical process industries to its home grounds, may not long continue to offer such attractions.

Available low-price power—the TVA area's chief selling point—is just about to run out. This will make it difficult for the big, power-consuming chemical plants to expand their already considerable foothold in the seven-state area which the authority serves.

TVA's own figures show it won't have enough power to meet peak loads during the 1954-1956 winters; it will barely have enough to squeeze by this winter. Present customers, though, won't have to worry since the agency can bring in power from near-by areas for abnormal situations. A tight supply and rising rates will discourage heavy power users for some time to come.

And the outlook for more power at cheap government rates is further clouded. President Eisenhower, last week cited TVA as an example of "creeping socialism," and called for a re-evaluation of the theory whereby taxes from the country at large subsidize a single region, which, in turn,

tries to draw business from other areas.

Congress, too, has expressed such opinions, cutting back TVA's planned power expansion. Economy-minded congressmen can't see why they must go on appropriating more money for TVA than the agency is paying in. During its 20 years, TVA has cost \$1.6 billion, has paid back \$67.1 million.

Certainly, though, TVA has received a counterbalancing share of praise for doing well those functions that can best be accomplished by public enterprise.

Magnet for Chemicals: TVA's low-priced electric power has been a big drawing card for chemical industry. Six years ago, TVA estimated that 13% of all the factory workers were in chemicals. This was topped only by textiles, with 22%. A current estimate puts the chemical percentage a good deal higher than the textile figure.

The valley's expansion was most rapid during World War II. The Korean mobilization has brought a new period of growth. This time, though, the increase in industrial activities and employment is at a pace somewhat slower than obtains in the nation at large.

TVA has been increasing its indus-

trial power rates because of its purchases from outside utilities and higher steam costs. Nevertheless, its industrial power price remains about half the average to industry throughout the country. Present charge: about $\frac{1}{2}\phi$ /kwhr. Industrial users in the areas around the Tennessee valley, however, pay rates not too far above TVA's. This probably has been an effect of TVA rate levels.

On the Wire: The blueprint of Washington officials for future electric expansions in the Tennessee valley seems to be one of cooperation. Instead of the federal government's dominating possible expansions, it would work in partnership with industry and with local and state governments. Details of such a partnership still would have to be worked out.

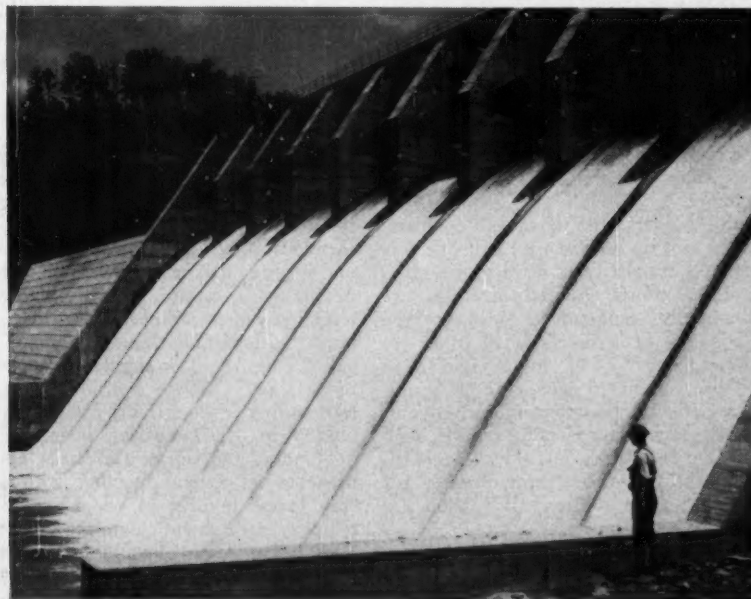
Will such a blueprint also mean changes in TVA's other chemical tie—making fertilizers? One thing is sure: TVA won't be expanding such production.

In its last full fiscal year, TVA distributed 628,000 tons of fertilizers and silicate slag. One-sixth of the material was distributed in the valley through six federated cooperative and six county groups. The other five-sixths was sold through three regional cooperatives (with 57 affiliates in 36 states) and seven private firms (which sold in 14 states).

Because TVA fertilizer goes chiefly to demonstrate improved fertilizer practices or systems recommended by agricultural colleges, the agency feels that, instead of competing with commercially produced fertilizer, it is developing new markets for such producers. Because of this it feels that any variance in the prices it charges for fertilizer are thus insignificant. It charges \$70/ton of ammonium nitrate, compared with the \$72 f.o.b. commercial price.

For its fiscal years, it sold \$18.7 million in fertilizer, figuring \$1.4 million profits (7.5% of sales). At year-end it had almost \$1 million in accounts receivable (5%). Certainly, the over-all fertilizer industry sales total makes this sales figure seem insignificant.

A primary worry of industry in the area has been that TVA would use its chemical operations as a base for expansion. Right now, such a worry seems out of place. Present governmental patterns seem to presage nothing more than status quo for TVA.



TVA's POWER: Nothing extra over the dam.

From Sewage to B

Vitamin B₁₂ from Milwaukee sewage is the ambitious aim of Chicago's Vern E. Alden Co., Engineers, which has signed a contract with the city's sewage commission.

It had long been realized that the dried and disinfected sludge from the city's sewage plant, tagged Milorganite (from Milwaukee organic nitrogen), is relatively rich in vitamin B₁₂. But the city fathers on the commission decided they would be out of bounds legally if they were to authorize the use of public funds on a commercial plant not directly connected with waste treatment. So they asked Alden to submit plans and cost estimates for a vitamin plant and approached several big producers of B₁₂. When none of them came forth with a proposal to build such a plant, Alden decided to take on the job itself.

According to present plans, Alden will build a pilot plant within 60 days to treat between 40 and 90 tons of the sludge over a period of three months. It will then conduct a market survey on the sales potential of the product. If the piloting proves out and the market is established, Alden would go ahead with a \$1-million plant. Potentially, the plant could treat 70,000 tons/year of Milorganite, enough to produce the equivalent to 140 kilograms of pure vitamin B₁₂. Exact output, of course, will be dictated by the size of the market.

Presently, the sales of Milorganite (as fertilizer) gross about \$2.4 million/year. Income from it amounts to 60% of the operating costs of the whole sewage disposal plant. Under the agreement with Alden, the Sewage Commission will get 35% of the net profit before taxes from the sales of the concentrate.

The original discovery of active products in the material dates back to work done at the University of Wisconsin during the '30s, where it was discovered that chicks and hogs grew faster when the fertilizer was added to their diet. It was Miner Laboratories (Chicago), however, that identified the active ingredient as B₁₂ and that developed the process Alden will use in extracting it.

The vitamin concentrate will be sold as a feed supplement, has been approved by the Federal Food & Drug Administration for that purpose. The commission figures the income from the vitamins will be pure gravy, will not interfere with sales of the fertilizer. Meanwhile, Alden is continuing research aimed at uncovering other salable products in Milwaukee's sewage.



STANDARD STOCKHOLDERS IN SESSION: To keep in business . . .

Firms Learn: It Pays to "Sell"

Chemical companies, which have varied widely in their approach to stockholder relations, now give signs of moving in the same direction. Up until recent years a large majority merely went through the motions of communicating with stockholders; now former inadequate consideration is giving way to serious thought. Management hasn't come up with all the answers, but it's trying.

Management's major consideration today, according to a CW survey conducted last week, is what the stockholder wants. Annual reports have taken on a new look; many companies now employ full-time stockholder relations consultants who advise on preparation of financial reports and proxy material.

Many Means, One End: In its attempt to cultivate the good will of stockholders, the chemical company has sent up myriad trial balloons, has found in most cases a warm reception of its efforts. Annual meetings are normally accompanied today by "the courtesy of a luncheon or other refreshment." Plant tours, similar to those conducted each year by Standard Oil, are becoming more frequent. Post-stockholder meeting reports, such as Du Pont sends out, officially recording the floor-to-platform repartee for those unable to attend the session, are growing in number.

Pfizer's annual meeting, for example, is an elaborate affair nowadays. Held in the company dining room, virtually papered with huge displays outlining

Pfizer operations, this year's version featured a TV-like panel with continually changing color views of various operations at the Groton plant. And 1952 was animal year at the meeting. On hand were minks, pigs, lambs, and a tiger cub to trumpet Pfizer's entry into the farm field with a line of terramycin-spiked feed supplements. The meeting itself is run in the usual way. Stockholders (some 200 of them this year) are "vigorously" encouraged by President John McKeen to ask questions; members of the board and other executives line up to answer questions pertaining to the activities of their various departments. Lunch is served in due course, and the stockholders are invited to tour the plant.

At Union Carbide's annual meeting (where attendance has picked up some 500% in the past 10 years), something the company makes is passed out, tremendous time and effort is spent on staging the meeting. Travelling microphones, carried by hand-picked feminine representatives of Carbide's publicity department, make communication from the floor simpler. You see results, say Carbide representatives, in correspondence arriving from stockholders in ever-increasing quantities.

Standard Oil Co. of California approaches its annual meeting with a "top brass" huddle, in which an attempt is made to anticipate the line of questioning. Almost invariably, Standard finds, such questioning reflects current newspaper headlines. Seldom do they touch upon intracompany prob-



... you have to keep the owners happy.

Stockholders

lems peculiar to Standard. "We always expect one or two nuts to rise up with insistent questions sometimes deliberately phrased to be embarrassing. Last year there were several—but this week, none."

Kaiser Aluminum, typical of many companies, finds that the only people asking substantial questions are the security analysts in attendance—"and they are fishing for inside information that management has to be very careful to avoid giving." The president's message is written to forestall numerous queries by answering them beforehand, has been found to be "unusually effective in establishing rapport."

Most chemical companies today try to establish "depth behind the president" at annual meetings, recognize that the key to good stockholder relations lies in full information, an honest attempt to answer all questions point-blank.

Monsanto's Board Chairman Edgar Queeny says of today's annual report: "the only value of a stockholder's report can come from . . . complete candor." In addition, the stockholder receives quarterly reports and a little folder affectionately known as "the dividend stuffer," is assured that all correspondence will be answered within 24 hours "as fully and as candidly as company security permits." Annual meetings are honored with the initial showing of Monsanto's latest newsreel film depicting events of the previous year; office tours follow.

Companies agree there's no typical

stockholder. He isn't always sure just what he wants, but he's becoming more and more convinced of his right to talk about it. Blanket invitations to "come in at any time and talk it over" aren't enough. Today's stockholder wants to get on his feet and be heard.

What He Wants: Increased attendance at annual meetings, admits management, has brought up attendant problems. Everyone must be made to see what's going on; everyone must be able to hear. Televised broadcasts have been the answer in some companies; regional meetings (with no legal status) have been added by others.

Where the annual meeting takes place is a touchy point with many "individual owners." Atlas, for one, bowed to public demand, moved its annual meeting from Wilmington to New York in 1952.

Some chemical companies have found the policy of having auditors attend the annual meeting useful in maintaining healthy stockholder relations. Carbide goes one step farther, sends out reprints of institutional investments between its quarterly statements.

A cardinal rule in maintaining confidence among stockholders is to display "fair treatment in basic policies involving their financial interests." Its manifestations: liberality in dividends; full, frank and frequent disclosure on matters involving earnings; overt (as well as oral) display of management's desire to hike the stock's market value.

"After all," quotes one chemical president, "our stockholders are the real owners; we owe it to them to go more than halfway."

Rationality Returns

A political campaign rarely is a bland, we're-all-jolly-good-fellows affair; most of them are rough and tough—the opponents berate and disparage each other to the degree that wooing the populace demands. Bitter as any community campaign in recent weeks was the town of Henderson fracas in which Basic Management, Inc. was involved (CW, June 20).

The mayoralty candidate, James B. French, ascribed but little good to the motives of the chemical corporations that comprise BMI, and his down-with-company-domination arguments won him the election. But by this week a good deal of the sulfurous charges had vaporized; the election fight was over; a modicum of rationality was returning.

In answer to French's charge that BMI had in effect saddled Henderson with a bill for \$40,000 by giving it a water and sewage system, company officials contend: "Henderson is fortunate in getting the BMI-donated facilities." Otherwise, they aver, the town would have had to go into debt to finance it. Moreover, they say, the water system will probably be the municipality's main source of revenue for some time to come.

After a few meetings, BMI executives are convinced, all the irritations and misunderstandings will be cleared away, all the pre-election tussles forgotten. Already, for instance, the council and BMI have scheduled get-togethers to talk over the proposed transfer of sewage and water facilities.

It may be a matter of six months or

so before all the troubles are ironed out—that BMI executives admit. But, even now, there's a new spirit. Say they: "French is a good mayor. If he sticks to the job, we and the town can be partners—mutually prosperous partners."

A Clash Continued

There's no armistice, not even a truce, in the labor union struggle at Du Pont's neoprene plant in Louisville. The International Chemical Workers Union (AFL) finally came out with a clear majority in the third bargaining election there (CW, June 13), but before the National Labor Relations Board issued its certificate, new complications sprang up.

Du Pont and the defeated union—Neoprene Craftsmen's Union—are asking NLRB to set aside the third election on the grounds that ICWU influenced the employees by causing a committee to distribute an estimated \$25,000 to various employees. That committee had been appointed to liquidate the \$33,285 assets of the now defunct Affiliated Chemical Workers of Kentucky, which formerly held the bargaining agency there.

When six employees complained that the money had been handed out before the court order became final, Circuit Judge Macauley L. Smith issued a contempt citation against members of the liquidation committee. Possibly the hearing on the contempt citation may determine the stand the NLRB will take.

ICWU organizer Raymond O. Nicodemus denied that his union had anything to do with the disbursement. He said the ACWK office happened to be in the building where ICWU held a pre-election rally, and that because the ACWK lease was due to expire in a few days, the committee decided to try to discharge its duties then.

COMPANIES

The Beryllium Corp. is offering to holders of its outstanding common stock, rights to subscribe to over 88,000 shares of new common stock at the rate of one additional share for each four shares held. Money raised by the sale will be used to finance capital improvements related to an expansion program estimated at over \$2 million over the next two years.

Empire Chemical & Supply Co., Inc., Mission, Tex., has been formed to turn out agricultural and industrial chemicals and fertilizers. Owned joint-

ly by Hayes-Sammons Chemical Co., Mission, Tex., and Charles F. Lunsford, former manager, Agricultural Chemical Div., W. R. Grace & Co., the fledgling firm will temporarily lease part of Hayes-Sammons facilities, will branch out soon to build plants throughout the country. Also formed: Empire Chemical & Supply Co., a sales company, with outlets in Mexico, Central and South America.

Minnesota Mining and Manufacturing Co. has acquired American Lava Corp., Chattanooga, Tenn., through a \$5-million stock transfer. American Lava will become a wholly owned subsidiary.

EXPANSION . . .

Gypsum: The National Gypsum Co. (Buffalo) is considering the construction of a gypsum plant in the Midwest, where it has discovered a new

deposit of gypsum rock. Plans are in the embryo stage; no decision has been made as to when construction will start.

The plant would produce gypsum board and plaster for the building industry, would cost between \$3-5 million.

Textile Chemicals: Standard Chemical Products, Hoboken, N.J. will build a plant at Charlotte, N.C. to manufacture chemicals used in the textile industry. Total investment: between \$500,000 and \$750,000.

Perchloroethylene, Anhydrous Hydrochloric: Hooker-Detrex Inc. will expand its plant at Ashtabula, O., to produce perchloroethylene and anhydrous hydrochloric acid. Estimated cost: around \$1 million.

The Ashtabula plant is a jointly owned subsidiary of Hooker Electrochemical Co. and Detrex Corp.



Tinged With Antiquity

OPENING CEREMONY of Lederle Laboratories (India) Ltd. at Bulsar was marked by elaborate style. Highlight of the bejasmined affair: unveiling of a memorial plaque to the late Dr. Yellapragada SubbaRow, Indian scientist who was director of research, Lederle Laboratories, Pearl River, N.Y. from 1940-1948. SubbaRow's mother, Mrs. VenKamma (right) is shown with R. T. Bogan, Lederle's director of foreign operations.

Financed with half-a-million dollars of American capital, Lederle's plant is the first wholly U.S.-backed manufacturing enterprise to open up in independent India. Designed primarily to manufacture sulfa drugs, Aureomycin and folic acid, the 30,000-sq. ft. lab will soon make other products.

Says U.S. Ambassador George V. Allen: "... though there is still much mutual suspicion, time and experience will erase it."

U.S.I. CHEMICAL NEWS

June 27

★ A Series for Chemists and Executives of the Solvents and Chemical Consuming Industries

★ 1953

Change in Cooking Agents Solves Pollution Problem

What is termed by its authors as the "complete answer" to the problem of stream pollution by pulp mill wastes was revealed at a recent technical society meeting. The new process hinges about the use of magnesium bisulfite as the cooking agent in woodpulp production instead of the present calcium bisulfite. In this way, the digester residual liquor (the crux of the present problem) can be satisfactorily evaporated and disposed of by burning. Chemicals can be recovered and used again, and heat from the combustion of the organic matter can be used for the efficient generation of steam and power.

Experiences with a commercial mill set up to study and use the process are said to have definitely established the economic soundness of the idea.

Wounds Show Affinity for S^{35} from Tagged Methionine

Results of recent research with methionine, tagged with radioactive sulfur (S^{35}), are seen as further positive proof that methionine is involved in the healing of wounded tissue. By injecting radioactive methionine into wounded rats, investigators were able to follow the course of the S^{35} through the body. Within five days of injection, they found twice as much radioactive sulfur in regenerating wound tissue as in normal unwounded skin tissue. This concentration continued to increase, with the rate of increase corresponding to the rate at which the wound healed.

Analysis showed most of the radioactive sulfur in the wound tissue to be associated with cystine. In addition, there was more cystine in the wound tissue than in normal tissue. This indicates that scar tissue produced during wound healing is different from normal tissue protein. The experiments showed that most of the sulfur in the regenerating tissue was supplied from the tagged methionine.

Al-Sb New Semiconductor

Scientists recently reported the development of a new low-cost compound of aluminum and antimony which they think may one day compete with germanium and silicon as a semiconductor for transistors, rectifiers, and other electronic devices. The compound is one of a number of combinations of aluminum, gallium, and indium with arsenic and antimony now being investigated for possible uses.

The researchers explain that aluminum-antimony has essentially the same diamond-like structure as silicon and germanium. Work to date has shown that the material can be used to convert light to electrical energy, suggesting its possible use in photo-electric cells. Rectifiers have been made in the laboratory with the material, and transistors are said to be a distinct possibility in the future.

Aroflat Alkyds Found Superior In Controlling Paint Consistency Over All Temperature Changes

Low-Temperature Studies of Viscosity Changes Show Aroflat 3025 And 3050 Unique in Keeping Alkyd Flats Brushable at All Practical Painting Temperatures; Film Properties Also Improved

The solution to an important problem encountered by both manufacturers and users of interior flat paints is seen in data recently made available on viscosity-temperature changes of alkyd-type flat paints and their resin ingredients.

The now common practice of finishing interiors at all seasons of the year, together with the rapid growth in preference for alkyd finishes, has made the relationship between temperature and viscosity in these paints an important consideration. Now, a paint's brushing characteristics and other properties during cold and warm weather conditions are as important to its over-all satisfactory performance as its behavior at normal temperatures.

Consistency Change Factor the Criterion

The most important change that occurs in alkyd flat paints as the temperature drops is an increase in viscosity. If the viscosity changes rapidly with temperature, the paint is said to have a large "consistency change factor." In a cool atmosphere, such a paint becomes thick, ropery, and difficult or impossible to brush without considerable thinning. And thinning, in turn, reduces the non-penetrating and non-ghosting properties (sheen and color uniformity) of the paint. Tempo-

rarily heating the room with space heaters can be resorted to, but practical paint technicians are quick to point out that this does not appreciably heat the wall surfaces. Since paint is applied in a thin film, it cools almost instantaneously on a cold wall, regardless of its temperature in the can. If the paint has a large consistency change factor, it will be almost as difficult to apply as in an unheated room.

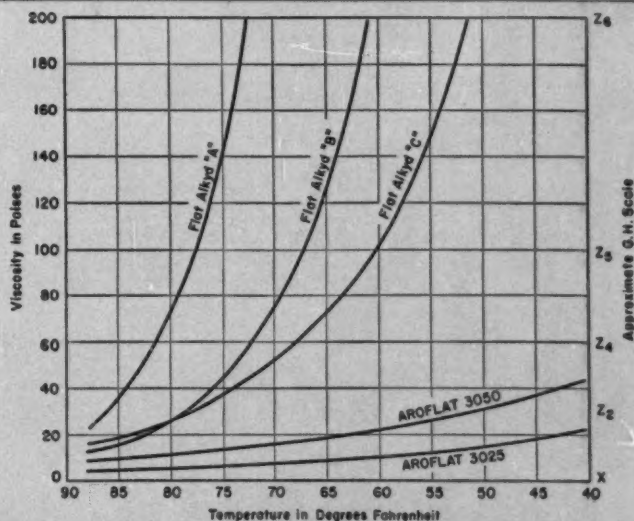
AROFLAT Alkyds Furnish the Answer

In pioneering alkyd resins for better flat and semi-gloss wall finishes, U.S.I. laboratories were aware of these viscosity problems and developed AROFLAT alkyds with unique and inherent qualities to overcome them. Data demonstrating the low consistency change factors imparted to paints by these resins was obtained recently in an independent study which paint manufacturers can verify easily in their own laboratories.

Resin Viscosities Compared

In this study, viscosity determinations were made on various resins at temperatures within and beyond the range likely to be encountered in year-around decorating. U.S.I.'s AROFLAT

MORE



Curves showing the viscosity behavior of AROFLAT 3025 and 3050, contrasted with that of three conventional-type alkyds, as the temperature decreases from 90° to 40° F. The steep curves of the conventional flat alkyd resins mean that paint formulations containing them will be difficult or impossible to brush in cool weather, or after they have been stored in a cool place.

June 27

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U.S.I. CHEMICAL NEWS

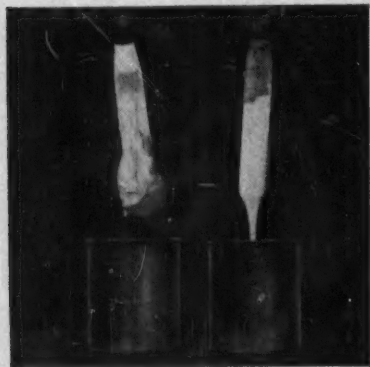
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1953

CONTINUED

Viscosity Studies

3025 and AROFLAT 3050 were included, as well as a number of conventional alkyd resin solutions of other companies. All of the resins were tested in the form in which they are offered to paint manufacturers.



The paint on the right is formulated with AROFLAT 30/25, that on the left is a commercial flat containing a conventional alkyd. Both were held at 40° F. prior to this demonstration.

Representative curves showing how the viscosities of these resins changed with temperature are plotted below. The flat curves of the AROFLAT resins over the full temperature range offer a sharp contrast to the steep curves of three conventional alkyds, all of which are incorporated in flat paints now on the market.

Paints Show Same Effect

Further tests showed that the viscosity characteristics of these resins carried over into their respective paint formulations. For example, in a comparison of finished paints, all with consistencies of 80-81 Krebs units at 78° F., the AROFLAT formulations increased to only 86-88 units when the temperature was lowered to 63°. Over the same temperature drop, consistencies of conventional alkyd paints jumped to 140 units or more. Most

New Rub Test Instrument Seen Aiding Ink Research

Rub-resistance, the property of an ink which preserves the sharp, clean appearance of printed matter throughout its useful life, is becoming more and more important, particularly in the packaging field. To fill the need for a standard test of this property, an independent research organization recently announced the development of what it describes as a new and better portable rub tester.

The characteristic motion of the instrument is planetary, i.e., a one and one-half inch square piece of paper or print is rubbed in a circle at 25 rpm over the print under test while the square piece undergoes a slow rotation of its own. Three pressures are available, and the machine can be set to turn off automatically after 1 to 50 cycles. Test conditions are entirely reproducible, directional effects of the stock are averaged, and the instrument eliminates streaks and deep gouges, it is claimed.

authorities agree that paints with consistencies greater than 100 Krebs units are too thick to apply satisfactorily.

Film Properties Also Affected

Tests on the films of these paints at reduced temperatures, as well as at prolonged elevated temperatures, showed that they lose flexibility in a comparable manner to their sharp consistency changes. Films of AROFLAT paints applied to Morest charts remained flexible at both extremes of temperature while those of conventional paints cracked when the Morest charts were folded.

AROFLATS Yield Fool-Proof Paints

To the paint manufacturer, the results of these tests mean that with the AROFLATS he can formulate his paints to be much more "fool-proof." U.S.I. technicians point out that spring and autumn seasons bring sufficient temperature changes to produce application difficulties. While the summer ahead supplies temporary relief, now is the time to correct any fundamental faults so that stocks on dealers' shelves will not be a source of future trouble during cool weather.

TECHNICAL DEVELOPMENTS

Information about manufacturers of these items may be obtained by writing U. S. I.

Gluing operations in confined spaces and on small objects are said to be easier with a line of adhesives now packaged in collapsible tubes with hypodermic needle tips. Adhesives are nitrocellulose, vinyl, and rubber types. (No. 930)

The flat, non-divergent, knife-like ribbon of air, water, or steam emitted by a new cleaning nozzle makes it suitable for descaling, de-barking wood, cleaning buildings and equipment, and many other uses, according to the manufacturer. (No. 931)

A new chemical resistant lab coat, made of lightweight vinyl fabric, is claimed to be virtually immune to spotting and acid holes, to outlast ordinary lab coats many times, and to retain a neatly tailored appearance through hard wear and launderings. (No. 932)

For stabilizing latex emulsion paints, a new dry-form casein has been announced which dissolves easily at the point of use, provides improved viscosity, brushability, mechanical ability, and helps prevent hardening of paint pigments. (No. 933)

New stainless steel-vinyl plastic coatings, now available in all colors, are said to be impervious to moisture, resistant to most chemicals, quick-drying, and capable of withstanding constant dry heat up to 300° F. (No. 934)

Clear, clean ice flakes, freed of sediment and trapped gases, can now be made directly in the laboratory with a fully automatic machine which produces up to 300 pounds of ice daily. Ice is said to remain flaky for days if kept in an insulated bin. (No. 935)

A new molybdenum-base lubricant in the form of an enamel can be applied to any type of surface including plastics, glass, and ceramics to yield a thin, hard coating which is greasy-feeling but clean, the manufacturer states. (No. 936)

Spot determinations of pH to within one-half a unit over the full pH scale can be made, it is claimed, with a series of six new indicator papers with color scales printed on the containers. (No. 937)

A new fire blanket for labs and homes is made of plastic-coated glass cloth, weighs two and one-half pounds, is resistant to acids, alkalis, and most solvents, and stays flexible in below zero temperatures. (No. 938)

New plastic acoustical ceiling tile, lined with fiber glass, is said to be easy to apply by the home owner or industry, to be easily cleaned, and to be stain-, peel-, and chip-proof. (No. 939)

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Food for Thought

Every year in its annual report, Imperial Chemicals Industries Ltd. injects a number of tantalizing tidbits about its new processes and products. And just as regularly the company coyly denies that development has come along far enough to allow publication of details.

This year, no exception:

- **Titanium:** "Work on the small-scale Kroll reactor, which uses the process adopted for large-scale production in the U.S., has continued, but an alternative method, developed in the company's laboratories, is very promising." No hint of what's involved in the latter process can be ferreted out of top-rung officials. But the company is building a plant, presumably around the Kroll reactor, to produce 100 tons/year of wrought titanium—"sufficient material for prototype applications by customers in the engineering and aircraft industries." Perhaps significant: ICI says it has (in the design stage) a plant to produce annually some 1,500 tons of sponge titanium, expects to convert it by melting into massive metal.

- **Sulfur from Anhydrites:** While remaining mute on the cost of extracting sulfur from anhydrite (calcium sulfate), ICI claims its process "in a vertical retort" has proved promising enough on a laboratory scale to give the go-ahead on construction of a full-scale model.

- **Terylene:** ICI reports development of a packaging film from Terylene polymer "which shows great promise." Describing the process, the company says: "To obtain the best properties, the film has to be stretched both lengthwise and crosswise. This stretching creates considerable engineering difficulties, but small supplies of satisfactory film possessing exceptionally high strength have already been produced, and a pioneer plant is nearing completion."

- **Glycerine from Molasses:** ICI's Nobel Div. last year opened its pilot plant for the production of glycerine by the fermentation of molasses, is now taking a look at the technical and economic aspects of full-scale output.

- **Lubricants from Fluorine Compounds:** ICI claims its two-year research into the field has paid off in lubricants that (while expensive) have proved economical in special cases where high resistance to certain chemicals is desired. Dry runs are being conducted in a variety of industries to see if large-scale production is warranted.



U.S. & CANADA'S JOINT COMMISSION*: On proposal for international anti-pollution board, they're undecided.

Fumes Across the Border

It used to be a little matter that could be handled at the neighborhood level, but air pollution now has worked its way up to the highest levels. In at least one place, it's being recognized as an international problem.

Up in Detroit's federal building last week, United States and Canadian members of the International Joint Commission held a two-day hearing on a request for establishment of an international enforcement agency to police air pollution on both sides of the border in the Detroit-Windsor industrial community. Particularly complained about in last week's testimony: smoke from ships passing through the Detroit River between the two cities.

Spokesmen for Great Lakes shipping companies insisted that most of the pollution comes from land-based smokestacks, added that their firms already had cut contamination from ships by 40%.

Present System 'Feeble': Officials of both cities testified in favor of the proposed enforcement agency. Detroit's chief smoke inspector recalled that his municipality had asked for the agency three years ago. "Since then, we have been trying to accomplish smoke abatement through voluntary compliance, but without success," he reported.

As the hearing ended, members of

the commission gave no hint as to what action it would take on the request, or when. It did put its o.k. on a plan for warning ship captains by ship-to-shore radiotelephone when their ships emit too much smoke.

But elsewhere, the campaign for purer air and clearer skies goes on with increasing fervor. The Illinois state legislature is on the threshold of passing a bill that would set up, with a \$35,000 appropriation, "a commission to investigate and make a study of atmospheric pollution throughout the state." It would consist of three members of the state senate, three members of the lower house, and the chief sanitary engineer of the state health department, and would be assigned "to make a complete and thorough survey of the causes and effects of atmospheric pollution."

Coast-to-Coast Anxiety: A stepping-up of antipollution activity is under way in the largest city on each of the country's shore lines. With his agency's payroll for the coming fiscal year boosted by more than \$85,000 to a prospective \$232,682, New York City's commissioner of air pollution control is promising "a vigorous new assault on the city's air contamination problem, notably smoke." First step: appointment of five prominent engineers to serve as an advisory committee. Next moves: hiring 19 new staff members, equipping an air pollution laboratory.

On the other side of the continent,

* Left to right: J. Lucien Dansereau, Canada; Roger B. McWhorter, U.S.; A. G. L. McNaughton, Canadian chairman; A. O. Stanley, U.S. chairman; George Spence, Canada; Eugene W. Weber, U.S.

Los Angeles County's board of supervisors is requiring installation of vapor tanks on all gasoline storage tanks within 24 months, with deadlines varying according to size of tank and nature of distillate. The oil industry's cost of compliance is estimated at more than \$7 million, but oil companies didn't oppose the ruling. Gaseous substances formed through action of oxygen and sunlight on gasoline vapors have been blamed for a major part of the heavy crop damage and other evil effects of Los Angeles' smog.

Three chemical companies may be affected by agitation over air pollution in an inland city. The town council of Trenton, Mich., prodded by the demonstration of 120 angry citizens, voted to hire an "unbiased" smoke engineer. The aldermen also voted to send seven members of the town's smoke abatement committee on a trip to study Pittsburgh's fight on smog.

Companies Claim Gains: In several cases, various chemical firms have reported big improvements in control of factory smokes and vapors. At South Charleston, W.Va., Carbide &

Carbon Chemicals Corp. has received credit for "elimination" of sulfuric acid fumes at its Blaine Island plant.

Ten years ago, that plant was discharging an estimated 14 tons of sulfuric acid mist each day. Now, after much intensive study, experimentation, and expenditure of nearly \$3 million, emission is "virtually nil." Carbide is catching the fumes in a water fog that drops to the bottom of the chamber as an acid-in-water solution that can be recycled.

Du Pont, requested to cooperate in the air pollution abatement program at Tonawanda, N.Y., has signed contracts for an alteration of the air exhaust system of its nearby plant, and is studying other ways of reducing contamination. Serving as the town's consultant in this program is C. Merrill Brown, chemistry professor at the Univ. of Buffalo.

Thus, throughout the nation, and especially where industry is concentrated, there's steadily mounting pressure on public and company officials for air that's more breathable and see-throughable.



AFL'S MEANY: Birth of unity depends on death of raiding.

for new members, Gas-Coke is heartily in favor of the no-raiding proposal.

ICWU leaders, on the other hand, are believed to be divided on the issue, despite the wholehearted endorsement by AFL President George Meany. One says the no-raiding pledge would double the effectiveness of the union's organizing efforts; another says it's a futile gesture on which ICWU convention delegates shouldn't waste their time. The pact is not enforceable, and similar agreements in the past between individual unions have proved worthless. Still, that type of compact between the CIO Auto Workers and the AFL Machinists has been working rather well.

The other big union in the chemical industry is District 50 of John L.



CIO'S REUTHER: For chemical employees, a unionizing speed-up.

Rear Guards Not Needed?

If it works out, the proposed "no-raiding" agreement that the AFL and CIO want to put into effect for a two-year period starting next Jan. 1 may be a big boost for labor unions' plans to bear down on organizing of chemical employees.

Last year, an estimated 25,000 production and maintenance employees of chemical processing plants came into the various unions, and another 10,000 have been issued union cards so far this year, but the chemical and allied industries as a whole still aren't much more than 50% unionized.

One big reason for this slow, piecemeal drift toward the unions is that chemical workers generally feel that they're reasonably well treated by their companies and don't need collective bargaining agents. Another stumbling block for unions in the chemical field: competition. While some unions in other fields enjoy virtual monopolies, (e.g., those representing steelworkers, printers, railway conductors), there are three unions specializing in chemical employees and dozens of others dabbling in this realm. Much of their time, zeal and money is used up in fighting each other.

No United Front: The chemical labor unions can't do much about that first retarder, but they could do

something about the second hurdle. If they adopt and carry out the no-raiding pledge, they'll be able to concentrate on winning new members, won't have to worry so much about holding on to the ones already in the fold.

So far this year, the CIO's main entry in the chemical derby—United Gas, Coke & Chemical Workers—has staged at least two all-out raiding attempts at plants whose employees were represented by the AFL's International Chemical Workers Union. Gas-Coke wrested away from ICWU the bargaining agency at Carter Products, New Brunswick, N.J., while ICWU repelled the raiders at National Carbide, Ivanhoe, Va.

Right now, Gas-Coke finds the shoe on the other foot, is struggling to protect its bargaining rights at the Oak Ridge gaseous diffusion plant (operated by Carbide & Carbon Chemicals) from the hands of the AFL Atomic Trades Council, which bargains at the other Oak Ridge facilities.

Mixed Reactions: Earlier this year, Gas-Coke got a full-steam-ahead signal from CIO President Walter Reuther, who named chemicals first in listing fields in which organizing was to be accelerated. Eager to be able to withdraw its "rear guards" from Oak Ridge and step up its crusade

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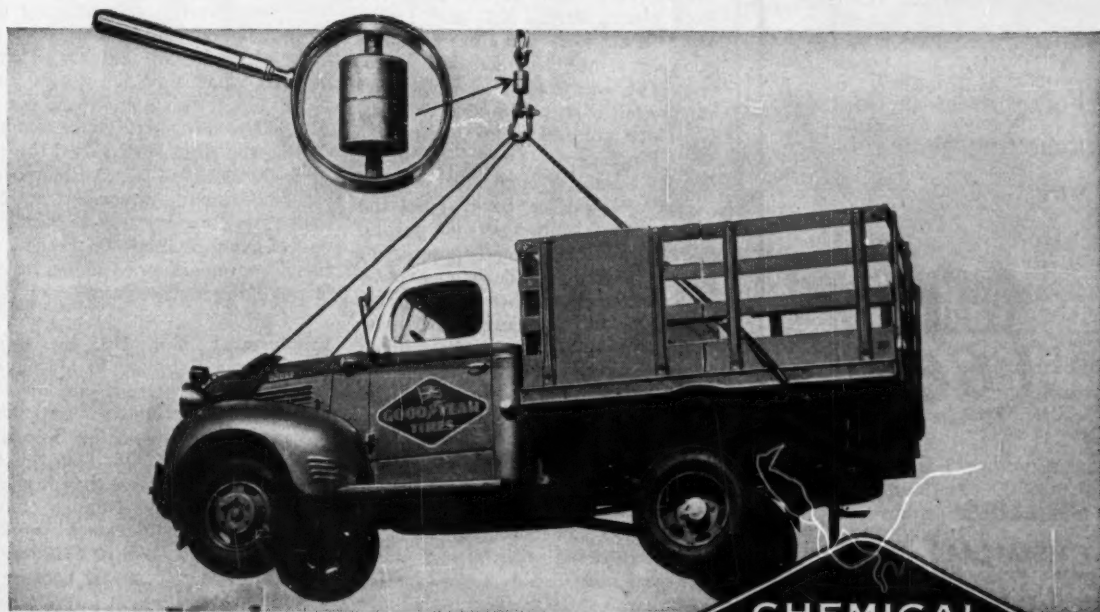
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BUSINESS & INDUSTRY

Lewis' United Mine Workers. The UMW now stands as a lone wolf among unions, contemptuous of AFL-CIO "unity" talks and refusing to do business with the National Labor Relations Board.

Won & Lost Average: On percentages, the labor unions are doing better this year than last, although their rate of intake of new members has subsided slightly. Last year, in 309 NLRB elections at chemical processing plants, employees at 90 of the plants turned thumbs down on all unions. Union victories were apportioned as follows: AFL unions, 112; CIO unions, 78; non-affiliated unions, 29.

This year, while official figures are not available, it appears that unions are being more prudent, not asking for elections until they're pretty sure of triumph. Only significant examples of rejection of unions noted this year to date came at American Chemical Paint Co., Ambler, Pa., and the H-bomb plant being built and operated by Du Pont near Aiken, S.C.

Heading the list of union victories during the first six months of 1953 are ICWU's coups at two large Du Pont plants, Parlin, N.J., and Louisville, Ky.; and Gas-Coke's recent conquest at Merck's plant in Rahway, N.J. (This was a rerun of a disputed runoff; out of 1,390 eligible workers, Gas-Coke got 681 votes to 606 for the Employees' Organization of Merck, 4 void, 7 challenged.)

If the no-raiding treaty frees the unions from the necessity of posting a "rear guard" to defend those prizes from rival unions, there may be a big spurt in the number of organizing campaigns at chemical plants next year. As always, first targets will be plants with dissatisfied workers; it's union dogma that the ripest fruit is the first to fall.

LABOR

Summer Strike Season: All of a sudden, the chemical process industry news is cluttered with tales of walk-outs. Some are already settled, others are only threatened, a few are still going on. In most cases, the issue is a little matter of money, and compromises can be expected before much production is lost. Among the lot:

- Ethyl Corp.'s year-old plant at Pasadena, Tex., near Houston, was the scene of a mix-up involving several unions. The company worked out agreements with the Oil Workers International Union (CIO), which represents some 600 employees at that plant, and with the AFL Sheet Metal

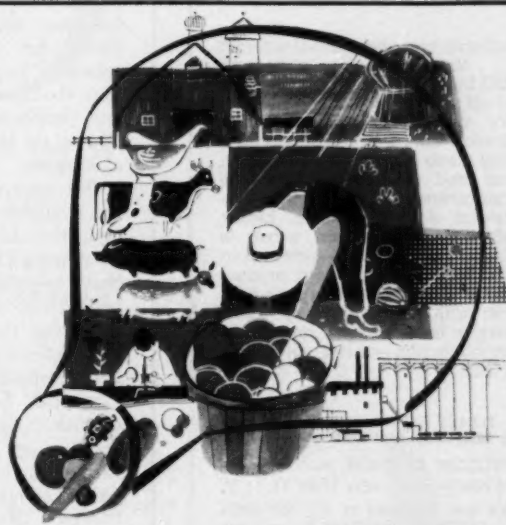
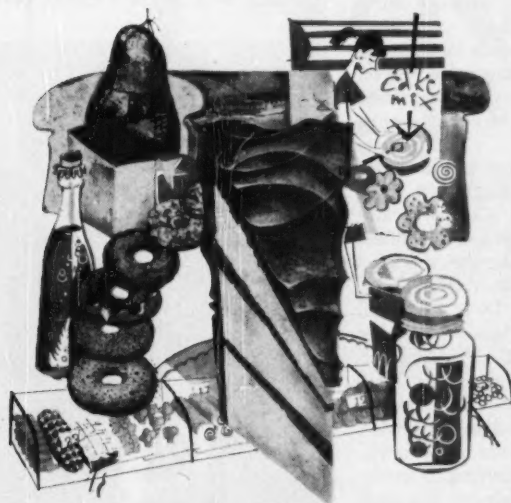
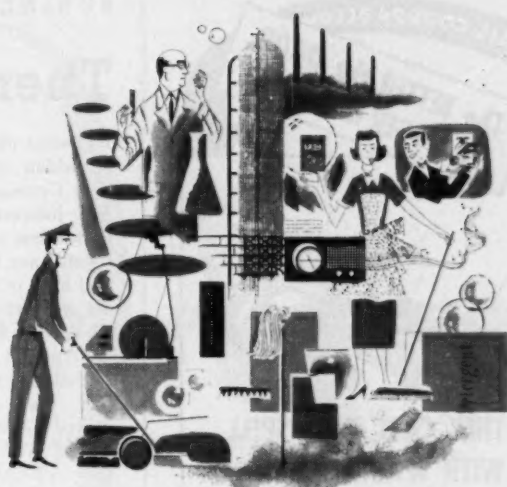
Workers. But the 32 AFL Plumbers and Pipefitters, demanding a \$2.52½ an hour wage while the company reportedly offered \$2.49, went on strike. Ethyl got a temporary injunction against picketing, claiming that the real reason for the strike was that the pipefitters wanted to handle certain jobs that previously had been assigned to OWIU members.

- A dynamite blast that destroyed the main pump at the Jefferson Island Salt plant near New Iberia, La., reminded all concerned that some disgruntled ex-employees still refuse to admit that they've been licked. Picketing by ICWU Local 28 is limited by court order to not more than two persons at a time, and company officials say that production is "close to former capacity," with nearly a full complement of new employees replacing the strikers, but at least a few of the union members won't give up.

- Some 2,300 production workers halted operations at the Parke, Davis & Co. plant at Detroit, pressing for a freeze of all of the current 19¢/hour cost-of-living allowance into base wage rates. The company's "final offer": freezing all but 5¢ of that allowance into base rates, continuing that 5¢ remainder, raising wages by another 4½¢ plus another ½¢ in fringe benefits. That, according to the company, would bring minimum pay to \$1.78 for men, \$1.61 for women. During the strike, P-D raised the pay of 1,400 classified salaried employees by \$8.65/month—equivalent to 5¢/hour. The company now is basing its cost-of-living payments on the new national consumers' price index, instead of the old index for Detroit.

- **Employment Up:** Up by nearly 10,000 from February to March was the number of persons employed in manufacture of chemicals and allied products, according to the Bureau of Labor Statistics. At 761,200, this figure also is 10,000 more than it was in March one year ago. Number of production and maintenance workers climbed from 519,600 in February to 527,000 in March, mostly because of a 5,100-man pickup in fertilizer production.

- **More than Double:** In a recent "Labor" column (CW, May 30), it was stated that the wage rate at Ethyl's Baton Rouge plant was 53¢/hour in 1945, the year the employees joined District 50, United Mine Workers. A company spokesman informs CW that the plant's 1945 rate for operators was \$1.11 plus 21¢ incentive pay for a total of \$1.32/hour.



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BUSINESS & INDUSTRY

There for the Digging

For some obscure reason, there's been a sudden upturn of interest in wartime German chemical research. Such new interest amazes the government custodians of the reports: the documents have been available since 1947, and most of the developments covered are now at least eight years old.

The total number of documents in government hands is over 100,000. It includes reports made by teams of U.S. and Allied investigators who visited German plants at the end of World War II, as well as documents they collected.

When the material was first released, many chemical companies had full-time researchers culling documents for weeks. Such activities, reasoned government officials, meant that the companies must have seen and purchased copies of everything that might have been of even marginal interest.

But apparently, there is still material available for the digging. A week ago, the Library of Congress and Commerce Dept.'s Office of Technical Services—which handle the reports—mailed out over a thousand of them.

During the week, Dow Chemical got a report on acetylene, butynediol and formaldehyde; B. F. Goodrich Chemical, fumaric and maleic acid dinitriles; Alrose Chemical, *o*-phenylenediamine; and Canadian Industries, Ltd., anhydrous sodium hyposulfite. Other companies receiving reports: Blockson Chemical, Armour Research Foundation, Kennecott Copper and Du Pont.

The reports sell for 10 cents to \$10 or more. Commerce has reproduced many of them for sale by mail or over the counter. The Library of Congress has a master copy of the remaining ones, and makes photostat or microfilm copies on order.

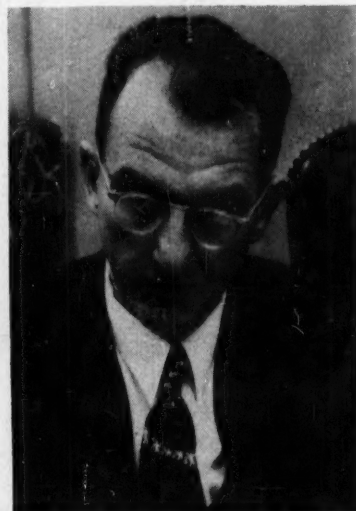
The Why of It: John Green, director of OTS, traces in the continuing demand for reports a need for scientific and technical literature in the performance of government contracts. But he is quick to point out that this isn't the whole answer.

Now, with mobilization efforts past their peak, he admits the demand could have several causes: search for diversification, more competition, and thus a spur to product improvement, or, perhaps, just a look for something new.

Many firms that use German development obtained through the reports minimize their values. Others are enthusiastic. The president of a

fine-chemicals company, which bought 500 reports, estimates that the information gained led to the firm's initial or greatly improved manufacture of at least 50 products. Sales of these items has already brought in "many" hundreds of thousands of dollars.

Finding and Filming: The demand for chemical reports has caused OTS to go back through scores of unpublished reels of microfilm that contain processes and technology of several firms, and to break them down into individual process reports. Last week, OTS was identifying and translating organic chemical patent applications originally filed in the German patent



OTS' GREEN: He helps the diggers.

office. In this way, OTS is hoping to provoke wider interest in the information that was shown when the reel was listed in the OTS monthly bibliography of technical reports as "Patent Applications in the Field of Organic Chemistry."

The stockpile of available reports is continually growing, both through such translation work and by the acquisition of reports of current nonsecurity research at government laboratories or of government-sponsored research.

But right now, the best sellers are the early German reports—those one would expect to be the most widely known. And while there are many reasons why a company is reluctant to discuss where and how much it gets out of checking over captured enemy technology, this is obvious: the diggers are striking pay dirt in a wealth of valuable, still-unexplored material.

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BUSINESS & INDUSTRY

Summer Respite

After this week's three-day rebuttal by Justice Dept. lawyers, the government's antitrust suit against Du Pont, General Motors and U. S. Rubber Co. will be shelved for the rest of the summer. Both sides are to hand in written briefs next fall, and final arguments will begin Dec. 7.

Defense testimony ended in a week that saw three "big name" witnesses take the stand in federal court in Chicago. Walter S. Carpenter, Jr., chairman and former president of Du Pont and a GM director since 1926, testified that the bonus plan for GM executives was not intended to make those officials subservient to Du Pont, and that the size of the bonuses was not related to Du Pont's annual earnings.

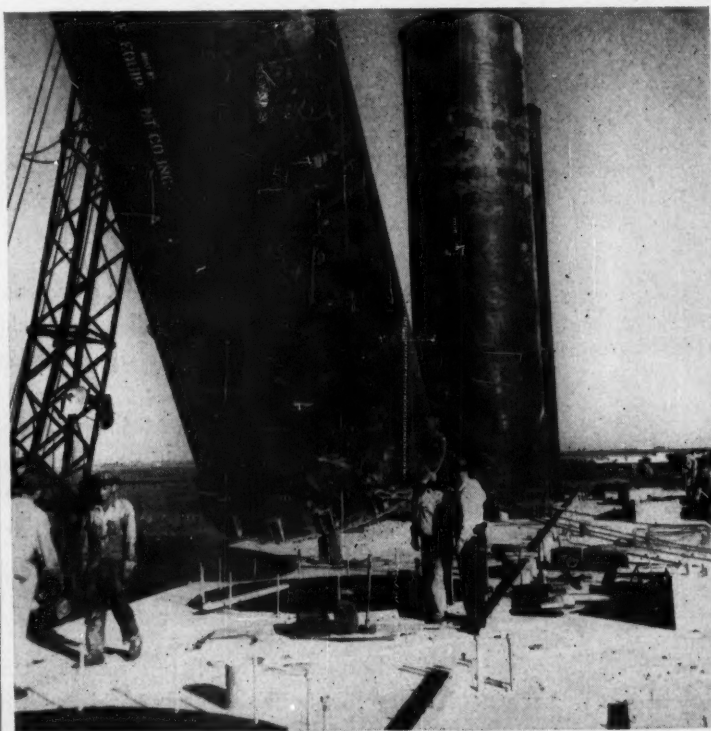
Du Pont President Crawford H. Greenewalt—whom the government's cross-questioning attorney first addressed as "Mr. Du Pont"—denied the government's charge of a "monopoly conspiracy" among the three com-

panies. The government is asking the court to order Du Pont to sell its 20 million shares of GM stock.

Last and best known witness for the defendant companies was Charles E. Wilson, who resigned as GM president in January to become U. S. Secretary of Defense. He asserted he was never influenced to favor Du Pont in GM purchasing; "I never even knew how much stock [Du Pont] owned."

LEGAL

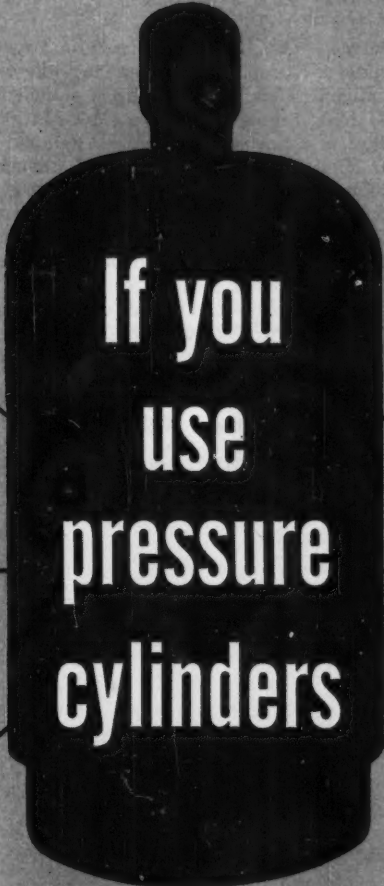
Swiss Still Trying: Upon showing that it's making new efforts to get its ownership documents out of the custody of the Swiss government, the Swiss holding company Interhandel has been given another 30 days in which to produce those papers in U.S. District Court, Washington, for the suit over General Aniline & Film Corp. If Interhandel can prove that it's not "enemy controlled," the U.S. government will have to hand back the approximately 97% of the GAF stock seized during



Mississippi Mirage

RISING like a ship above Garden Island Bay, the Freeport Sulphur Co.'s multimillion sulfur plant is taking shape. The power plant—heart of a sulfur mining operation—includes huge heat reclaimers

needed to preheat millions of gallons of water daily; foundations rest on more than 2,000 pilings driven 85-90 ft. into the marshy ground. Estimated output: 500,000 long tons/year by 1954.



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RUST-INHIBITING ADDITIVE
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Characteristics: A yellow viscous liquid soluble in water, alcohols, glycols and glycerine. Sp.G. 1.30 pH (10% Aq. Soln.) 7.9-8.3

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BUSINESS & INDUSTRY

World War II; and Interhandel can then sell that stock to Blair Holdings Corp. of New York for \$60 million (CW, May 30). If Interhandel fails to prove its point, the U.S. Office of Alien Property will be able to offer the GAF stock in a public auction.

Funds Pile Higher: For at least four months longer, chemical firms and other big users of natural gas will have to keep on paying indirectly the "gathering tax" that has been levied by the Texas legislature but which is being fought in court by some 59 large and small pipeline companies. Defeated in an appeal to the Texas Supreme Court (CW Newsletter, June 13), those companies now are expected to ask for a review by the U.S. Supreme Court—which will be out of session until October. If the companies can convince the high court that the tax is unconstitutional, Texas will have to refund tax receipts now piling up at the rate of more than \$1 million a month.

Caking Leads to Lawsuit: There's a way to keep mixed fertilizer from caking (CW, Nov. 22, '52), but a lawsuit pending this week in Louisville,

Ky., indicates a need for a method of keeping fertilizer ingredients from lumping up during shipment from mines to factories. Edward R. Panther, Louisville & Nashville Railroad switchman, is suing Federal Chemical Co. for \$51,769. Panther alleges that while on duty last March, he was injured by a dynamite explosion in a nearby boxcar loaded with phosphate for the fertilizer company. His lawyer adds that Federal "caused and permitted" the explosion to loosen the phosphate, which had hardened en route from Florida.

One Judge Willing: National Carbide will be able to get a hearing, starting July 13, on its appeal of a \$100 air pollution fine, now that the contending lawyers have found a judge who's willing to hear the case. Both of Louisville's Criminal Court judges disqualified themselves (CW, June 20), but Circuit Judge K. S. Alcorn of Stanford, Ky., has indicated his availability.

Extralegal Approach: Since they can't get relief in the courts (CW, June 20), victims of the 1947 Texas City fertilizer explosion should be com-

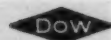


Good-Will Boost Via Baseball

RECOGNIZING fellow employees by their profiles is the germ of the latest idea for bettering plant and community relations at Carbide & Carbon Chemicals' Texas City plant.

Each week, five head silhouettes

of employees are printed in the plant newspaper. The employee who does the best identification job gets to use the company's box seats for one baseball game, and Carbide gets credit for helping to support the home-town team.



IMPORTANT INTERMEDIATE BY DOW USED TO MAKE BETTER DYESTUFFS

Manufacturers of pharmaceuticals, too, rely on the high quality of DOW 3-methyl-1-phenyl-5-pyrazolone



PROPERTIES

White to slightly yellow powder
Boiling point at 17 mm. Hg 191°C.

Melting point..... 128.9°C.
Molecular weight 174.2

3-Methyl-1-phenyl-5-pyrazolone is an important chemical intermediate to manufacturers of pyrazolone type dyestuffs. And in the preparation of fine pharmaceuticals, too, this chemical has gained equal importance as an intermediate.

To you and to all present and potential users of 3-methyl-1-phenyl-5-pyrazolone, uniform quality is important for production control and a successful end

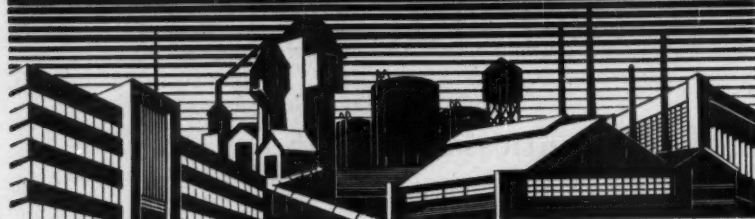
product. Years of experience, research and extensive production facilities at Dow enable us to provide chemical intermediates on which you can depend for uniformity, quality and availability.

For your own evaluation of 3-methyl-1-phenyl-5-pyrazolone, we will be glad to send you an experimental sample. Write to THE DOW CHEMICAL COMPANY, Midland, Michigan, Dept. FC 3-10.

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we put the "Automatic" in FIRE PROTECTION



You've no doubt read or heard from time to time that one or another type of fire protection is the correct answer to your safety problem. One says foam is best. Another says water sprinklers are the answer. Perhaps carbon dioxide, dry chemical, or other media will do the trick.

What is the most effective method?

Without a thorough understanding of all conditions involved, we wouldn't hazard a guess. For fire protection, like any other scientific problem, requires (1) technical know-how, and (2) application of that knowledge. Most methods of fire safety are good . . . but only through "FIRE PROTECTION ENGINEERING"—designing, manufacturing and installing the specific type of system *best by test*—can you be sure of maximum safety.

So, we take all methods of fire alarm and control, combine them with extinguishing mediums—FIRE-FOG, Air Foam, Sprinklers, etc.—and compound the results by adding "Automatic" technical know-how as well as test and field experience. The result . . . the finest "Automatic" FIRE PROTECTION available at any price.

The subject is more vividly covered in our colorfully illustrated literature, "The ABC of Fire Protection." Write for free copy today.

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OFFICES IN PRINCIPAL CITIES OF NORTH AND SOUTH AMERICA



B & I

compensated under special Congressional authority, says Congressman Clark Thompson of Galveston. He feels that families made destitute by that disaster should have first consideration, but adds that he has "no thought of shutting the door to redress that may be sought by firms and corporations entitled to compensation." Among the plaintiffs in the cases rejected by the U.S. Supreme Court was Monsanto, which asked \$50 million for loss of its styrene plant.

Life-Giving Lenience

The Mutual Security Agency last week dropped the green flag for a number of foreign countries seeking to buy chemical and medicinal preparations in the U.S. Among its authorizations:

To France: Approval to buy \$1.3 million worth of medicines, pharmaceuticals—including \$500,000 of terramycin, \$400,000 of other antibiotics, and \$440,000 of chemical products for pharmaceutical use.

To Formosa: A grant to purchase \$600,000 worth of chemicals and chemical preparations; \$200,000 of nonmetallic minerals and their products.

To Indochina: \$100,000 for antibiotics.

Another U.S.-supported agency, The Institute of Inter-American Affairs, La Paz, Bolivia, has released a 127-item appeal list of medical and pharmaceutical preparations it wants to buy here. High on the list: aspirin, items needed to fight typhus, typhoid fever, diphtheria, tropical diseases.

FOREIGN

Farben/Germany: A German court ruling has effectively opened the door to damage suits against German firms by thousands of persons the Nazis consigned to slave labor camps in World War II. In an unprecedented legal action, I. G. Farben Co. was ordered to pay Norbert Wollheim, New York City, \$2,380 for his work and damage to his health as a concentration camp prisoner in the company's synthetic rubber plant at Auschwitz.

While five Farben officials felt the long arm of the law in the Nuernberg war crimes trials for using slave labor, the German court emphasized that it was not bound by that decision and had reached its verdict independently. Farben, however, may appeal in German courts.

Fertilizer/Sicily: The Societa Akragas (of the Montecatini Group) is building

**New and Improved
Money Saving—Product Improving**

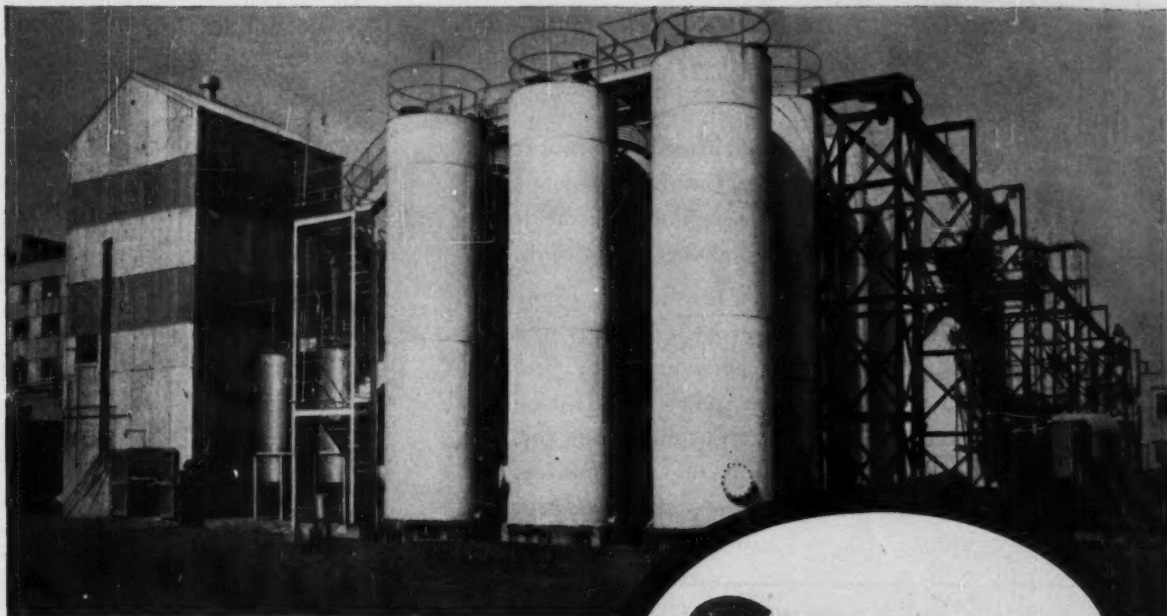
OXO ALCOHOLS

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**(BRANCHED PRIMARY ALCOHOLS)
for the Chemical Industry**



A pioneer and leading marketer of Oxo Alcohols, the Enjay Company and its affiliates with greatly expanded plant facilities are producing a new line of branched primary alcohols. More and more manufacturers of esters, plasticizers, synthetic oils, detergents and other chemical derivatives are turning to Enjay for money-saving, product-improving Oxo Alcohols.

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PARATONE
PARAFLOW
PARAPOID
PARADYNE
PARATAC
PETROHOL
Methyl Ethyl Ketone
Dewaxing Aid
Ethyl Ether
Isopropyl Ether
Reference Fuels

SURFACE COATING

PETROHOL 91
PETROHOL 95
PETROHOL 99
Secondary Butyl Alcohol
Secondary Butyl Acetate
Isopropyl Acetate
Acetone
Methyl Ethyl Ketone
Ethyl Ether
Isopropyl Ether
Dicyclopentadiene
Naphthenic Acids
Iso-Octyl Alcohol
Decyl Alcohol

CHEMICAL

PETROHOL 91
PETROHOL 95
PETROHOL 99
Iso-Octyl Alcohol
Decyl Alcohol
Tridecyl Alcohol
Benzene
Dicyclopentadiene
Isoprene
Butadiene
Ethyl Ether
Isopropyl Ether
Tripropylene
Tetrapropylene
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Acetone
Methyl Ethyl Ketone

The Enjay Company has long been recognized as a leader in the development and marketing of high-quality products for the oil, surface coating and chemical industries. Backed by greatly expanded plant and distribution facilities, the Enjay Company is supplying a constantly growing list of chemical products to many different industries.

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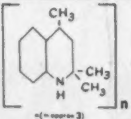
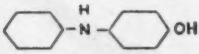
News about
B. F. Goodrich Chemical raw materials

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*REG. U. S. PAT. OFF.
 AROMATIC AMINES**

*—as chemical intermediates, anti-oxidants,
 for many applications*

USED successfully as anti-oxidants in the rubber industry for many years, Good-rite aromatic amines have expanded their uses into other fields —not only as anti-oxidants but in other applications.

The descriptive tables given here for two of the extensive line of Good-rite aromatic amines may suggest uses for your development or production programs. Technical bulletin sent upon request. Please write Dept. E-7, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. In Canada: Kitchener, Ontario. Cable address: Goodchemco.

<p>Trimethyl- dihydroquinoline Polymer</p>  <p>$n (= approx. 3)$</p>	<p>Softens at 75°C; clear amber pellets available commercially—225 lbs. in 61-gallon fiber drums.</p>	<p>Chemical intermediate, anti-oxidant, inhibitor, especially for petroleum based oils and greases.</p>
<p>p-Hydroxydiphenylamine</p> 	<p>Melting point, approximately 50°C; commercially available as a gray solid—400 lbs. in 55-gallon steel drums.</p>	<p>Anti-oxidant, chemical intermediate especially in the dyestuffs industry for synthesis of azo, carbazole and sulfur dyes, polymerization inhibitor.</p>

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CHEMICALS

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B & I

a fertilizer factory at Porto Empedecle, Sicily. Designed for an annual production of 50,000 tons of superphosphate (with a highly soluble phosphate content) or 30,000 tons of triple superphosphate, the plant will also include a section for the production of 100 tons/day of oleum.

Output is expected to cover Sicily's requirements and to leave a surplus for export to Egypt and Middle Eastern countries.

Exports/Italy: Under a newly inked trade pact, Italy will export to France during the second and third quarters of this year 26,000 tons of crude sulfur, 5,000 tons of pyrites, and 10,000 tons of coal tar pitch. Imports from France will include phosphate rock and bauxite.

Synthetic Fibers/Holland: The Netherlands State Mines expects to expand its plant at Emmen to meet increasing home and export needs for caprolactam. The possibility of large-scale production of polyacrylonitrile fibers is under consideration in Holland.

Cellulose/France: The Visking Corp., Chicago, Ill., has signed an agreement with Novacel S.A., Paris, France, to form a joint company to manufacture cellulose sausage casings in France. The joint enterprise will be known as Viscora S.A., will get into production soon.

KEY CHANGES . . .

Herbert H. Dow II, Herbert D. Doan: To directors, Dow Chemical Co., Midland, Mich.

Ray H. Boundy, Donald Williams, J. D. Hannawalt: To vice-presidents, Dow Chemical Co., Midland, Mich.

Joseph L. Laputka: To treasurer and secretary, R. M. Hollingshead Corp., Camden, N.J.

DIED

Ferdinand Sonneborn: Founder and president, L. Sonneborn Sons, Inc., New York City.

KUDOS

Lauren B. Hitchcock: President of National Dairies Research Corp., to honorary chairman, American Section, Society of Chemical Industry, for the year 1953-1954.

John A. Whittle, Jr.: Manager, government sales division, Eastman Kodak Co., to a four-year term on the board of directors, Armed Forces Communications Assn.

**FILL BETTER, CLEANER!
CLOSE TIGHTER, FASTER!
SPEED UP PRODUCTION...SAVE DOLLARS!**

With your own standard belt packer

with new

the key is in the valve closing device



KRAFT-lok TRADE MARK **MULTIWALLS**

For Granular or Pulverized Materials

the key to sound
economy and
greater efficiency
in new valve-type
gusseted multiwalls!



Unretouched photos of KRAFT-lok Multiwalls in use for packing and storing granular materials at Stone Mountain Grit Company, Inc., Lithonia, Ga. A clear, efficient operation all the way.

FIELD-TESTED...TIME-PROVEN!

Reorders in increasing volume are proof that KRAFT-lok Multiwalls are efficient in principle, efficient in performance.

KRAFT BAG CORPORATION

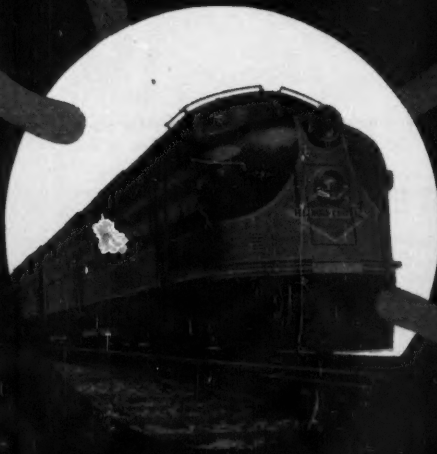
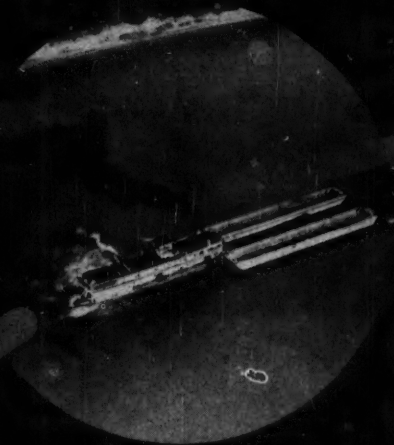
Gilman Paper Company
630 Fifth Avenue, New York 20, N.Y.
Manufacturing Plants: Chicago, Ill., and Portland, Me.

3 Generations of Bag Specialization



Plant at St. Marys, Georgia
and Gilman, Vermont

Pennsalt pioneers



Basic or "custom-made" chemicals . . . inexpensive electric power . . . plentiful fuel, water and raw materials . . . barge, rail and highway transport . . . proximity to markets . . . these are the things available at the new industrial and chemical center of Calvert City, Ky.

Pennsalt is interested in buying chemicals and raw materials from other plants locating here . . . materials that will assist Pennsalt to broaden the scope of its operations. Conversely, Pennsalt can provide basic or custom-made chemicals to nearby plants. Four major companies have invested over \$30,000,000 in new plants in this readily accessible inland area about 100 miles

from the center of American population. And the boom is just beginning.

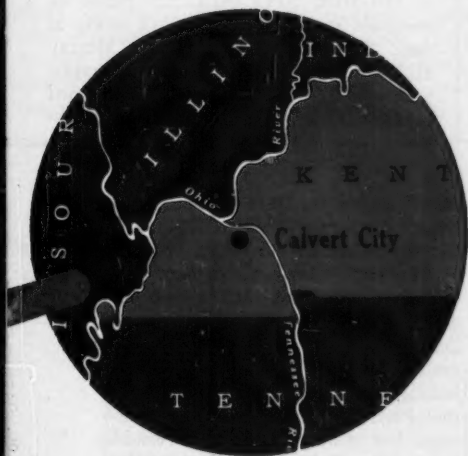
The Pennsalt plant, built in 1948, was the first in this area, and was followed by plants of Pittsburgh Metallurgical Company, National Carbide Company, a division of Air Reduction Company, Inc., and B. F. Goodrich Chemical Company. Other major companies are now considering the opportunities offered at this location.

For the complete story on Calvert City, write Customer Service Department, Pennsylvania Salt Manufacturing Company, 350 Widener Building, Philadelphia, Pa.

progress again!

new Calvert City, Ky., chemical center offers:

1. *Chemicals for your present plants*
2. *Locations for your new plants*
3. *Opportunities for interchange of products*



A UNIQUE COMBINATION OF CHEMICALS AND PLANT FACILITIES

Chlorine, caustic soda, aqueous and anhydrous hydrofluoric acid, sulfuric acid, and anhydrous hydrochloric acid are now being produced by Pennsalt at Calvert City.

Caustic soda, 50-72% liquid, produced here, is exceedingly pure, of rayon grade, made in de Nora mercury cells.

Fluorine and many other chemicals can be made here, including chlorinated and fluorinated organics and inorganics.

Calcium carbide and acetylene are now being produced by National Carbide Company, a division of Air Reduction Company, Inc.

Vinyl chloride monomer is now being produced by B. F. Goodrich Chemical Company.

Metals and ferroalloys are manufactured by Pittsburgh Metallurgical Company.

POWER—Abundant power at reasonable cost is available in the area.

WATER SUPPLY—Plentiful water for plant processes is available from the Tennessee River.

RAW MATERIALS—Coal, oil and a wide variety of raw materials are available in Kentucky and neighboring states.

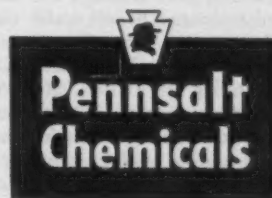
WATER TRANSPORTATION—The Tennessee River is navigable at Calvert City and barges can move to and from the Ohio River and the Mississippi waterways. Sulfur for the sulfuric acid plant and salt are now being barged to Pennsalt from the Gulf Coast.

RAILROAD TRANSPORTATION—The Illinois Central Railroad serves this area.

GOOD HIGHWAYS—Paved highways link Calvert City with major national highways.

PLANT LOCATIONS—Land for new industrial units is available on the river and railroad, close to the present chemical plants.

A GOOD PLACE TO LIVE—Calvert City is in an agricultural area. It enjoys a temperate climate and with its proximity to river and mountains offers many opportunities to industrial workers and supervisors for a good, well-rounded life.



RESEARCH . . .

New Role for Rare Earths

Rare earth metals are the newest driers and catalysts for paints and protective coatings; cerium, lanthanum and zirconium are already in commercial use.

Here's what they can do, how they were developed, where they can be used and who is interested in them.

To be fully effective, industrial research must not only produce something better; it must also produce something that will sell in the open market.

It shapes up that way in the driers market, where fruitful investigations have given the paint and protective coatings industries a new class of drier substances, but where commercial enthusiasm for them hasn't quite matched drier makers' fervor.

The neophyte products are compounds of rare earth metals and, paradoxically, they have a lot to commend them to coatings manufacturers. Cerium and lanthanum naphthenates and octoates, for example, offer these attributes to producers of heat-reactive coatings:

- Increased cross-linking, tougher and harder films.
- Wide scope of activity at normal baking temperatures and cycles.
- Excellent color retention.
- Cost savings arising from lower requirements of amino resins.
- Improved water and soap resistance of films.
- Better efficiency in baked films than obtained with other metallic driers.

As a group, the rare earth metals owe their new careers to the Korean war. Spurred by the threat of shortages of critical drier metals, especially cobalt, researchers of Advance Solvents & Chemical Corp. (New York) surveyed the roster of undeveloped, but promising, drier metals, settled on cerium as a likely candidate for further investigation.

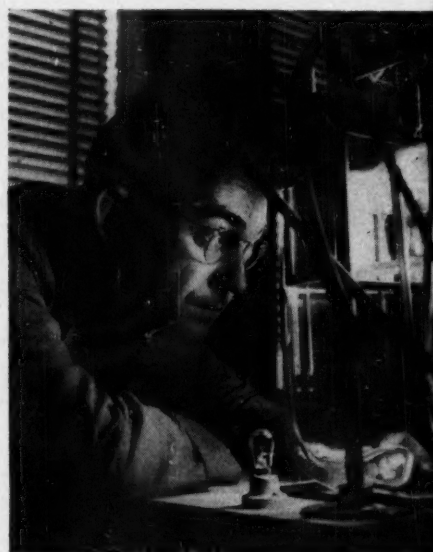
The choice ultimately proved a good one. As a 6% naphthenate solution, used in conjunction with spar varnishes, the metal showed good drying properties, gave a tough film and enhanced resistance to salt water corrosion. In paints it seemed to impart a degree of waterproofing, but was not outstanding as a drier. And, to make matters worse, it yellowed white paints. Delving into the mechanism of cerium oxidation, ASC researchers confirmed their dark suspicions: cerium naphthenate would never make the ideal air-drying catalyst.

Complex of Rarities: But, they reasoned, its potential value in bake finishes was still worth looking into. Moreover, combinations of cerium and other rare earths might also merit study. Both areas of exploration contributed to final success. Using a rare earth naphthenate solution, consisting of 50% cerium and 50% lanthanum with traces of praseodymium and zirconium, results were obtained, which—in the estimate of ASC's Charles Gardner—"were little short of startling."

To the Chicago Paint and Varnish Producers Clubs, a short time ago, Gardner reported: "... in white refrigerator enamels, baked at 350 F for 30 minutes, where cerium alone might give discoloration, the rare earth combination showed no discoloration, gave excellent mar resistance and helped increase adhesion. Field tests on Epon resins, styrenated alkyds, silicones and every-day oleoresinous baking alkyds confirmed the laboratory results of cleaner, tougher, better adhering films.

"In a white baking enamel with epoxy-type resins . . . [cured] at temperatures of 350 F for 30 minutes, the substitution of rare earth naphthenate for cobalt showed no discoloration whatsoever, whereas the cobalt-containing formula did discolor. Baking this same film at 380 F for 15 minutes gave similar results . . . The amounts of rare earth naphthenate varied from 0.02% to 0.4% metal based on the epoxy resin solids. We did find that excessive amounts of rare earth soaps caused embrittlement of the epoxy resin."

Saves on Amino: An interesting sidelight on the rare earths' drying activity is their ability to save on amino resins in certain formulations. In Epon formulations calling for urea or melamine resins, up to 10% of the amino resin could be replaced with 0.07 to 0.09% of rare earth metal at no sacrifice of quality. Very much the same holds true for styrenated alkyds. Unless melamine or urea resins are added, styrenated alkyds of the oxidizing type have poor mar resistance when dry. A small amount of rare earth naphthenate (about 0.03 to



Tiny Ceramics:

A HIGHLY SPECIALIZED phase of ceramics research, now in full swing at Bell Telephone Laboratories (Murray Hill, N.J.), is the development of ceramic materials to implement the trend toward miniaturization in the electronics indus-

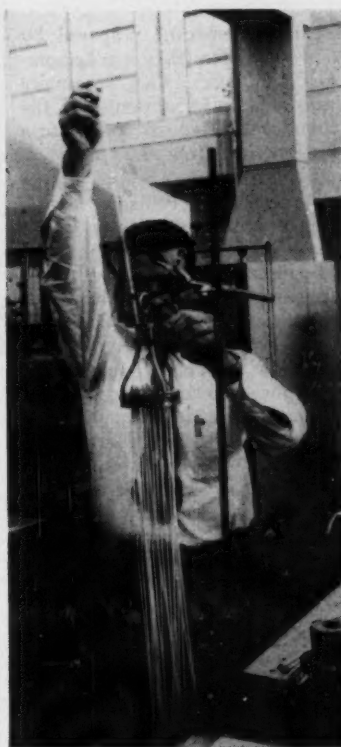
0.08% based on resin solids) boosts mar resistance, can often replace up to 10% of the amino resin.

And, states Gardner, "in some places, where the added amines are only 10% of the resin solids, they can be completely eliminated by using small amounts of rare earth metals." With baking-type soft oil alkyds, rare earth metal not only can replace up to 10% urea, but it may also replace double its weight of cobalt metal at no loss in drying performance.

Rewarding in their efforts to develop the rare earths as driers for baking finishes, ASC chemists were no closer to a cobalt substitute for air-drying finishes. In an effort to keep the potential job in the family, they turned to zirconium. The choice was not entirely accidental. The metal's ability to chelate with oxygen-containing compounds, form water-repellent films, made it a logical starting point.

But first attempts to put its suspected drying ability to work proved fruitless. None of the conventional acid carriers—tall oils, naphthenates, linoleates, etc.—could activate the metal. What was needed was an organic complex to carry it.

Zirconium Catalyzes: ASC researchers finally arrived at a suitable vehicle, found that zirconium was, in itself, not a drier. Its chief assets



Tailored in Three Steps

try. Rigid and exacting specifications for small ceramic components often necessitates a search for new compositions that can be tailored for unusual structural, electrical, magnetic and piezoelectric properties. The three steps: laboratory

testing (left) of a new composition; production of a developmental specimen by baking raw materials prepared in ball mill (center); and extruding rods (right) from the ground specimen. After firing, the rods are ready for fabrication.

reside in its ability to function as a partial substitute and catalyst for conventional drier metals. Gardner claims that, in general, the zirconium complex may be used to replace 40% of cobalt drier or 50% of manganese drier. There reputedly is no sacrifice of drying speed, while hardness, gloss and adhesion benefits.

Like calcium and zinc driers, the zirconium complex isn't discolored by hydrogen sulfide. This property suggests application in fumeproof whites, where, says Gardner, the zirconium metal complex will deliver the performance normally expected of lead metal as drier.

On the strength of their favorable technical notices, one would be justified in expecting the rare earths to be a powerful new force in the coatings field. And they may yet prove to be just that. But as of now, they're not quite commercial barn-burners. A run-down of activity among drier manufacturers tends to confirm this observation.

Fingers in the Pie: ASC has the lion's share of the trade, sells a cerium-lanthanum naphthenate and octoate (of 2-ethyl hexoic acid) plus a zirconium complex. For most other firms, demand for the neophytes isn't rapidly shaping up. Nuodex Products Corp. (Elizabeth, N.J.) has carried on

research with the rare earths for several years, recently introduced a cerium naphthenate. Frederick A. Stresen-Reuter (Chicago) makes the cerium-lanthanum naphthenate on order, reports sluggish demand.

Practically all of the other prominent drier manufacturers, though not in production, have expended some amount of preliminary effort. Harshaw Chemical Co. (New York), for example, is ready with a product consisting of cerium and lanthanum soaps, could swing into production whenever demand warrants. Witco Chemical Co. (New York) has eyed the rare earths for some time, but is not producing. Much the same holds true for Oronite Chemical Co. (San Francisco), which has a research project devoted to rare earth naphthenates. Ferro Chemical Corp. (Bedford, O.) also has investigated the materials, turned out laboratory quantities only.

The Big 'IF': Reasons for this lukewarm reception are fairly simple. One potential producer sums up the situation this way: "Demand for the rare earth naphthenates is now pretty well limited to white baking enamels for venetian blinds, can coatings and the like. That's not a very big piece of the drier market. And they're on the expensive side, cost a lot more than a cobalt drier. Of course certain use ad-

vantages tend to even out the cost. And there's always that big 'if; a substantial new use, for instance, could change the whole picture."

That doesn't seem like very much to go on. But one fact is crystal clear: very few drier producers are writing the rare earths off; most, in fact, have done a good deal of evaluation, could get into production on short notice. If, and when, that big "if" materializes, few will be caught napping.

Taste Doesn't Tell

Following up on a rare but commendable action, the voluntary withdrawal of coumarin from sale for food uses by four manufacturers* (CW, May 30), Chemical Week wondered aloud, got these sidelights on the situation:

- **What is coumarin?** It is a flavoring compound used in conjunction with extracts such as vanilla and coconut. It acts as a fixative and brings out the "tone" of the other flavors. (One flavor maker has 400 formulas involving use of coumarin, now all suspect.) "It is to flavor what musk is to perfume."

- **What caused all the hubbub?** A report titled simply "Toxicity

* Trubek Laboratories, Monsanto, Du Pont, Dow.

Studies on Coumarin," prepared by Lloyd W. Hazleton (Hazleton Laboratories, Fall Church, Va.), seemingly confirmed the toxic properties of the compound suggested by a literature survey. But there was more.

Predating Hazleton's report, a large food processor in the course of routine checking became suspicious of a coumarin-containing food flavor, made further tests. Its suspicions were strengthened. For a further check-out, the food concern made a literature survey, called in Hazleton Laboratories for an additional, independent confirmation. The collective finger of inquiry pointed again at coumarin.

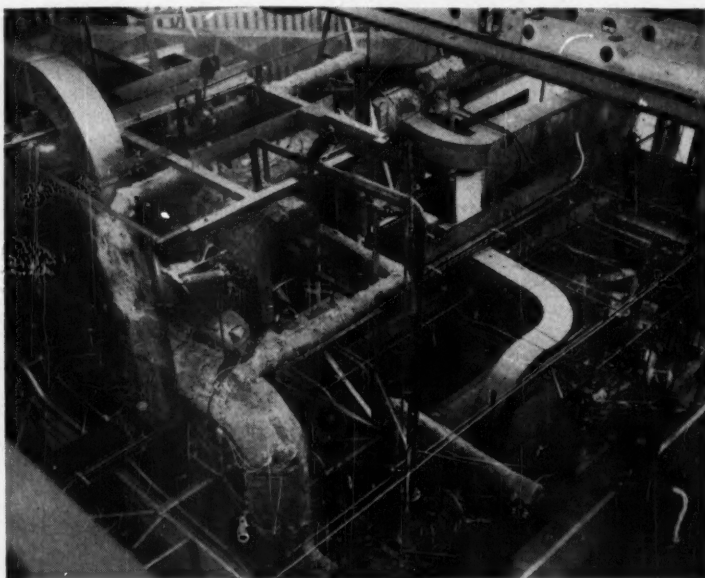
• **What did the report say?** Coumarin caused toxic effects in laboratory test animals (rats and dogs) at relatively low levels. More specifically, serious liver damage followed feeding of coumarin to test animals at levels of the same order of magnitude as food flavor usage—100 milligrams/day per kilogram weight of dogs.

The study goes on to report that 19 daily doses of 0.5 milliliter (of "an experimental flavor containing 20% coumarin") per kilogram weight produced gross signs of systemic (liver and kidney) toxicity in two dogs. However, withdrawal of coumarin for 14 days before sacrificing one of the dogs resulted in clinical improvement and return to normal of liver and kidney function tests. (This last finding could account in part for the absence of any known human fatalities in nearly a century of coumarin usage.) Similar findings resulted from the rat studies.

Coincidental tests were being run by the Food & Drug Administration on a number of flavoring compounds including coumarin. Although FDA tests hadn't progressed as far as Hazleton's studies, preliminary results indicated no conflicts with his conclusions.

By this time, the four coumarin producers were aware of Hazleton's investigations, were concurring in this potentially damaging probe—although at least one of the four, Trubek, had brought its coumarin plant onstream barely a year before.

• **What effect did the report have?** Doubt concerning the safety of coumarin food flavors has been created, but it remains merely doubt. As noted earlier, in nearly 100 years' use of coumarin, there have been no known human fatalities. True, these latest tests prove fairly conclusively that coumarin is toxic in low dosages to dogs and rats, but that doesn't mean that this toxicity carries over to humans.



Metered by Magnet

LIQUID SODIUM in this maze of pipes is yielding valuable data on the operation of new electromagnetic pumping and metering equipment. The setup is a closed-circuit loop devised by engineering researchers of Knolls Atomic Power Laboratory (operated in Schenec-

tady, N.Y., by General Electric Co.) as a means of obtaining performance curves on the magnetic system. Developed for experimental installations (e.g., for evaluating liquid sodium as a heat-exchange fluid), the pump and flowmeter have no moving parts.

After mulling such thoughts over, the four firms sent their representatives off to Washington with orders to offer voluntary withdrawal of coumarin from uses involving human dietary consumption until such time as the food flavoring can be unequivocally approved. The FDA accepted.

• **What's in store for the volunteers?** With their coumarin operations idle, the manufacturers aren't standing around speculating on the flavor's ultimate outcome. Rather, research on a harmless coumarin substitute has been thrown into gear and is starting to move.

Although coumarin came off the shelves only late last month, one enterprising firm already has its sights on the vacated space. Dodge & Olcott, Inc. (New York, N.Y.) memoed the trade last week on its newly developed coumarin replacement, Dolcourin. Offered in one-pound trial bottles, Dolcourin, says D&O, "contains no coumarin nor coumarin derivatives . . . (is) high in fixative value and approximately equal in flavor strength and tonal quality to coumarin."

The race for coumarin's lost legacy has begun. And the stakes are sub-

stantial enough to guarantee no paucity of entries.

• **Funds Needed:** U.S. Dept. of Agriculture is asking Congress for an appropriation of \$115,000 to finance research on cotton and wool fiber modification. The money would have two uses: to further acetylation-of-cotton studies; initiate a probe of ways to render wool mothproof and shrink-resistant.

• **Spreading Out:** A new laboratory and headquarters building is in the cards for Midwest Research Institute (Kansas City, Mo.). The proposed structure, slated to be started in the fall, will contain 71,000 sq. ft. of floor area on two levels, provide space for future expansion of the institute's activities, permit consolidation of all operations (now scattered through six buildings).

• **Special Service:** A unique consulting service has been initiated by BioRad Laboratories (Berkeley, Calif.). It's in the field of ultracentrifugal analysis, has greatest importance in molecular weight determinations. The ultracentrifugal method gives absolute rather



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RESEARCH

than average values for each component of mixtures containing species of more than one molecular weight. This, in turn, gives a rapid test for homogeneity or purity. Moreover, information may be gained on the configuration of molecules in solution. BioRad believes this is the first time such a service has been made generally available for research, development, and control work.

Entry to Economics: Southwest Research Institute (San Antonio, Tex.) is broadening the scope of its operations by the creation of an industrial economics department. The institute says the new branch will be "concerned largely with economics in the technical and production fields." Former San Antonio City Manager C. A. Harrell will head the new department.

Ground Breaking: Construction of a new three-story laboratory building has been started at the Madison (Wis.) headquarters of Bjorksten Research Laboratories. Due for completion by October, the building will give the consulting firm 15,000 sq. ft. of additional floor space. Its chief occupant: Bjorksten's polymer and plastics investigations.

New Entries: Six new organic chemicals are available from Benzol Products Co. (Newark, N.J.). They are: α -phenylacetone; allyl acetone; chrysanthemum monocarboxylic acid ethyl ester; 2,5-dimethyl hexadiene-1,5; 2,5-dimethyl hexadiene-2,4; ethyl- α -allylacetate; α -phenylbutyric acid; and triglycolamic acid.

Saturation Ouster: A new method of fractionating tall oil to remove saturated acids has been patented (U.S. 2,565,484) by Armstrong Cork Co. Here's how it works: tall oil is oxidized to a predetermined viscosity, passed through a partition chromatographic column containing a layer of granular silica impregnated with furfural, and a layer of petroleum naphtha. The resulting bands, separately eluted, give a fraction of tall oil substantially free of saturated acids.

Fat Aids: The color of fatty acids, esters and oils used in soap manufacture can be improved by treatment with an anhydride (e.g., maleic) at a temperature between 150 and 300 C until their polyolefinic components have reacted. The trick, according to recently issued U.S. patent 2,567,404 (to Colgate-Palmolive-Peet Co.) is to stop the operation before any monoolefins react.

• A concurrent Colgate patent (2,567,409) specifies a technique for improving the color of fatty acids (e.g., oleic) by treatment with maleic anhydride and a catalyst such as a mineral acid or an organic peroxide.

The Last Word: A newly issued dictum of Agricultural Research Administration (U.S. Dept. of Agriculture) appears to be the last word on the long-standing puzzle of X-disease or hyperkeratosis in cattle. The ARA states: "The only proved cause of X-disease is highly chlorinated naphthalene used in certain special-purpose lubricants and in certain other products, either as an added ingredient or as a contaminant." It goes on to explain that "tests have shown that many petroleum compounds, coal tar products and other substances will cause local thickening and hardening of the skin of cattle when applied in excess for a sufficient time. These local skin conditions have been confused with X-disease, but such products do not cause the disease."

Debut: A new high-pressure acetylene derivative is available from General Aniline & Film Corp. It's N-methyl-2-pyrrolidone, a solvent and intermediate. Promising uses: selective solvent for gas streams (it dissolves 39 times its volume of acetylene); and solvent for a number of resins (including acrylonitrile and polyethylene).

Red Tape Cutter

Procurement of materials and equipment by laboratories with defense projects has been simplified by a new revision of the Defense Materials System regulations. The new rule is designated "DMS Regulation No. 1, Direction 3," sets up a self-authorization procedure for priorities assistance.

In a nutshell, here's what it does:

• Permits any defense contract laboratory to use the allotment number B-5 and the rating DO-B-5 in obtaining products and materials needed for the performance of a defense project. This may be done "by self-authorization and without filing any application."

• Includes under its terms, research, production control, testing analytical, clinical and instructional laboratories.

• Applies only to orders that call for delivery after June 30. Reason: earlier "Direction 21 to CMP Regulation No. 1" canceled allotment and rating authority for deliveries after that date that do not bear a program identification (e.g., B-5).

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Briefs

From recent literature

No. 4 in a Series

Corrosion of steel by natural oil field brines containing hydrogen sulfide has been reduced in tests by the addition of corrosion inhibitors including the reaction product of diethanolamine and formaldehyde, and the reaction product of monoethanolamine and formaldehyde. The concentration of the inhibitors in the tests was 62½ ppm.

Thermo-plastic synthetic polymers which are free flowing, have a high dry solid content, stability on standing, and which, upon evaporation, yield a continuous tough and adherent film with a low degree of opacity free from hydrophilic colloids may be prepared by employing an emulsifying agent such as the ethanolamine salt of a sulphate of a fatty alcohol. The emulsifying agent is used in conjunction with a stabilizer and a surface tension reducer in dispersing the monomeric substance in an aqueous medium.

Textile lubricant suitable for use as a single application lubricant for cellulose acetate staple fibers and similar cellulose materials consists of a partial ester of phosphoric acid with a long chain aliphatic acid, an ethanolamine, such as diethanolamine or triethanolamine, an alkylolamine ester of a long chain aliphatic acid, and an alkyl phenol all mixed into mineral oil in suitable proportions.

Silver containing germicides which are water-soluble, non-toxic and non-staining can be prepared for use in ointments, unguents, etc., or for incorporation in latex products, bristles, textiles, resins, etc., to make them essentially self-sterilizing. The germicide can be prepared by reacting silver chloride with monoethanolamine.

These developments are abstracted from recent publications or U.S. patents. They may suggest applications of Jefferson Ethanolamines in your products or processes.

A Policy for Plants

Do you have a sound water policy in your company, in your plant? If so, you should be able to answer yes to these questions:

Do you make a complete water survey, compare and evaluate the alternate sources, before you build a new plant or enlarge an old one? A good source of information on available water supplies are the reports of the U.S. Geological Survey.

Do you make sure that all the water is not brought up to the highest requirements? All your cooling water need not be "drinking-pure."

Have you investigated the possibilities and economics of recirculation and multiple use?

Have you looked into the idea of using brackish water, or even salt water?

Do you encourage water conservation in the plant? Use of meters and constant records is particularly effective in that respect.

Do you make the most of controls to parcel out the proper amount of water automatically?

Planning for Plenty

Ask a chemical engineer to describe a plant site that would fulfill his minimum requirements and he'd probably picture a place that had reasonable access to the markets, adequate supply of raw materials and labor, enough power or power sources—and lots of water.

The problem of finding such sites is causing wrinkled brows among the planners of the chemical future this week. And causing as many wrinkles as any is the need for plenty of water.

What's more, the task is likely to get increasingly more difficult. Ac-

cording to Jack R. Barnes, the consulting ground water hydrologist who prepared the chapter on water resources for the report by the President's Materials Policy Commission, the U.S. consumed 185 billion gal. a day in 1950, 80 billion of which was used by industry. By 1975, he figures daily over-all consumption may be almost doubled—to 350 billion gal. Industry, meanwhile, figures to almost triple its consumption, to 215 billion gal. Thus, he concludes that "by 1975, water supply may be the most important factor effecting plant location."

Barnes, of course, is not alone in his conclusion. But the whole question of water resources and development is difficult to separate from its political and sociological overtones. It has been, for instance, the subject of a running battle between the President's Water Resources Policy Commission and the Engineers Joint Council. The latter charges that the programs advocated by the former would cause the federal government to infringe on the rights of the individual states and would "limit the possibilities of water development under private initiative." And just recently, the National Chamber of Commerce has thrown its weight behind substantially the same stand as that taken by the EJC.

Whatever the means, moreover, all three agree that the end should be a comprehensive policy that would permit the maximum development of the nation's water resources. On that score, they are in complete accord with the interests of the process industries.

Question of Consumption: One of the difficulties encountered in laying down a policy at the national level, or even for an individual plant, is the definition of "water consumption." For the data showing the huge water requirements for some products are often misleading. A plant, for instance, that takes large amounts of water for cooling, then returns it to the stream unchanged except for the temperature, is actually only borrowing water. On the other hand, a plant making ammonia from natural gas and hydrogen actually decomposes the steam to obtain hydrogen that very likely never returns to its original form.

In any case, although all indications point to the fact that choice plant sites with good water supplies are steadily dwindling, there are several left. One revealing study has been made by Ford, Bacon & Davis for the Corps of Engineers, which in turn was doing a project for the Bureau of Mines on the synthetic fuel potential of the U.S. Since a synthetic fuel plant requires vast quantities of water, the study dealt at length with that aspect. The study covered every state (and Alaska) with coal, natural gas or oil shale reserves. By and large, it found that most of the areas with enough raw material for synthetic fuel plants also had enough water. But it did find a few—chiefly in the Missouri, Colorado and Rio Grande River basins—adequate in all respects except water.

Among the states boasting of good water supplies are Maine and New

A Tankful per Pound

Water has been referred to as the universal raw material. It's difficult to pinpoint the exact needs for it in any given product because of variations in processes, plant practices and even the definition of "consumption" of water. But here, compiled from several sources, is an indication of the order of magnitude of water requirements for various products of the process industries:

To make one ton of

refined steel
viscose rayon
synthetic rubber (GRS)
synthetic ammonia
calcium carbide
ethyl alcohol (from grain)
butadiene (from alcohol)
sulfate pulp
soda pulp
sulfite pulp

It takes

65,000 gal. of water
350,000 " " "
600,000 " " "
94,000 " " "
30,000 " " "
4,200 " " "
380,000 " " "
70,000 " " "
60,000 " " "
60,000 " " "

And to make 1 bbl. of

refined oil
synthetic fuel (coal hydrogenation)
synthetic fuel (from coal)
synthetic fuel (from natural gas)
synthetic fuel (from shale)

It takes

770 gal. of water
7,286 " " "
11,150 " " "
3,736 " " "
873 " " "



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Hampshire, in New England; Buffalo-Niagara Falls and Ashtabula-Painesville (O.) around the Great Lakes. In fact the entire East is blessed with good water reserves. Glaciated states like Michigan also have plenty of water as does Wisconsin. And the Pacific Northwest, except in times of unusual drought, has more water than it knows what to do with.

Value Added: For the same reason of definition and varying plant practices, it's hard to rate the various process industries as water consumers. Barnes lists the steam electric power industry as biggest, taking 44% of all the water used by industry. Following in order are steel (16%), petroleum refining (9%), and pulp and paper (5%). Miscellaneous industries account for the remaining 26%.

The Engineers Joint Council took a different approach, compared the volume of water consumed with the dollar of value added by the manufacturer for a number of industries. Its figures (taken from the 1947 Census of Manufacturers) show steel in first place. It uses 1,400 gal. of water for every dollar of value added. On the same basis, the pulp and paper industry used 1,352 gal.; oil refining, 973; tanning, 4.7, and rayon, 3.6.

What's in Store: In the long run, of course, there's no foreseeable general shortage of water. The oceans represent a supply that is, to all practical purposes, inexhaustible. And the sun does an admirable job in evaporating it, transforming it back to fresh water. The only trouble is that nature has played some pranks in distributing the fresh water. Practically all the water that is consumed finds its way back in the ocean or back in the atmosphere, but often lands in a different place.

That means that the chemical industry, which is getting bigger and thirstier every year, will have to look harder and longer for plentiful water sites and will have to quench its thirst with less water.

Big steps in that direction have already been made. Barnes estimates that 15 billion gal. of the 80 billion gal./day used by industry in '50 was brackish. Particularly in the Southwest, plants have learned that brackish water will serve many cooling purposes. Freeport Sulphur is even trying brackish water for its Frasch mining of sulfur at Bay Ste. Elaine and there are indications that at least one other sulfur producer may follow suit.

There's also the possibility of eco-

nomically converting brackish or salt water into fresh water. Present methods are out of the question as far as costs are concerned. But there has been widespread interest in the idea of using permionic membranes for the job. Conceivably, more research going on right now on the membranes could pay off as a solution to getting fresh water from the sea in coastal areas.

Chemical companies have also learned how to conserve water by recirculation, multiple use, and by sound water-conservation programs. They've had to in order to even up on nature's distribution pranks.

EQUIPMENT

Filter Aid: A newly fledged carbonaceous filter aid will soon be introduced by Anthracite Equipment Corp. (Wilkes-Barre, Pa.). Trade-named AnthraAid, it will be available in four different grades. Big advantages, says Anthracite, are: (1) insolubility in hot and cold caustic solutions, (2) high incompressibility for filtering viscous materials at high pressure, (3) resistance to particle-size breakdown, (4) excellent shaving characteristics for continuous precoat filter operation.

Suction Hose: Quaker Rubber Corp. (Div. of H. K. Porter Co., Inc., Philadelphia) has just developed a new water suction hose, Revolc. Designed for both pressure and suction handling of water, it is reinforced with two layers of braided rayon cord plus a helix of high-tensile spring steel wire, will be available with 1¼-in. to 3-in. inside diameter sizes.

Steamed and Cleaned: From York-Shipley, Inc. (York, Pa.) comes word of a factory-coordinated industrial fuel burning system and four new fuel oil pumps. Touted as the first packaged system for the conversion of large boilers to oil or gas firing, the coordinated setup is built around the York-Power burner in a size range from 18 to 400 hp. Its pumps says Y-S, are the internal gear type, designed for quiet operation and are available in 100 GPH, 225 GPH, 400 GPH and 700 GPH capacities.

• And newly available from Premier Co. (St. Paul, Minn.) is its Model P-908F furnace and boiler cleaner for removal of ash, scale and soot. The cleaner has a 1-hp, 115-volt, ac/dc motor, weighs 43 lbs. and has a container capacity of 1.04 bushels.

Start and Run: Westinghouse Electric Corp. (Pittsburgh) is now marketing



Safety in the Cards

NOT UNIQUE but effective. That's how Dow Chemical looks at at the plan just started at its Freeport (Tex.) plant to put time cards to work as a means of getting the idea of safety across to its workers.

Formerly, the firm printed the slogans on pay envelopes. Then it realized that pay envelopes came in for scrutiny only on paydays, decided that time cards, seen twice a day, were a better medium.

a new single-phase motor that is both capacitor-start and capacitor-run. Aiming at improved efficiency, the motor is being made in 5, 7½ and 10 hp ratings, and is of 4-pole, 220-volt, 60-cycle design.

Name Change: Stockholders of Kold-Hold Manufacturing Co. (Lansing, Mich.) recently voted in a name change for the firm. New name: Tranter Manufacturing Co., after James R. Tranter president and general manager. Reason: the old name is no longer appropriate as a result of a product diversification program.

Growth and Consolidation: Quaid Fabrications, Inc. (Philadelphia) has topped off expansion of its administrative, engineering and sales facilities with acquisition of an additional building. The firm fabricates stainless steel and alloy equipment for the chemical industry.

• Owens-Illinois Glass Co. (Toledo, O.) recently consolidated all its publicity operations into a single unit. One publicity manager will supervise all product publicity. Significance: speedier product news dissemination to public and trade.

• Completion of a 12,000-sq. ft. unit is the news from Norwalk (Conn.). Perkin-Elmer Corp. added the new unit to provide plant space for manufacturing and laboratory facilities for its infrared process stream analyzers.

• Citing increasing demand as the reason, Thomas A. Edison, Inc. (West Orange, N. J.) is now planning for a 40% increase in battery production at its West Orange plant. More specifically, says the firm, rising sales of the Edison nickel-iron-alkaline storage battery (used in industrial trucks) is responsible for this \$6-million expansion.

Safety Topics: Now available from National Safety Council (425 N. Michigan Ave., Chicago) are a new "Handbook of Accident Prevention for Business and Industry" and the just-published 1953-54 edition of the National Directory of Safety Films. The directory provides a listing of 963 motion pictures and slide films for safety-training purposes, while the handbook shows how to set up and maintain a safety program.

• And the Munitions Board, Office of Industrial Security, is now offering a reprint from Occupational Hazards titled "Hudson County Gets Ready." The Hudson County referred to is the one in New Jersey with its high industrial concentration. The article details a workable pattern for cooperative effort in the field of industrial plant protection.

Pocket Comparator: Selling for \$22.50, Edmund Scientific Corp.'s (Barrington, N. J.) new, imported Comparator is being billed as an invaluable aid to production engineers and lab technicians. The instrument measures approximately 1½ x 2 in., gives 6-power magnification and its reticle is calibrated to measure angles, radius, circles and linear dimensions in both inches and millimeters.

Pressure Switch: Barksdale Valves (Los Angeles) is now offering a heavy-duty pressure switch, Model 9612, claimed capable of sensing any system pressure over an adjustable range from 15 to 3,000 psi. Proof pressure of the switch is 7,000 psi.

Motor Matter: A newly published bulletin, No. 1797, is currently being offered by U.S. Electrical Motors, Inc. (Los Angeles). Included are illustrations of Varidrive motors.

Tank Plant: Luria Engineering Co. (Bethlehem, Pa.) recently started construction of Delta Tank Manufacturing Co., Inc.'s (Baton Rouge, La.) third plant. Scheduled for September completion, the works will turn out pressure vessels, tanks and cylinders, primarily for liquefied petroleum gas.

Continuous Power: Electric Machinery Manufacturing Co. (Minneapolis, Minn.) is now producing flywheel motor generator sets. Designed for microwave system power supply, the generators are said to insure continuous power supply for protective relaying, supervisory control and communication on utility, pipeline and similar long-distance operation.

Collared Reactors: A new addition to many chemical reactors will be the glassed steel collars now being made by Pfaudler Co. (Rochester). Intended to fit over manhole flanges on expensive pressure vessels, the collars are designed to take the abuse that usually is borne by the flange when vessel covers are opened and closed constantly.

Resonance Spectrometer: A new high-resolution, nuclear magnetic resonance spectrometer, V-4300, manufactured by Varian Associates (San Carlos, Calif.), is being aimed principally at workers with hydrogen- and fluorine-containing compounds. By comparison of the unknown oscilloscope traces against known standards, it is possible to identify different isomeric structures. The spectrometer can be applied to studies of other isotopes by addition or substitution of various available radio-frequency units.



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BUYING: Lederle Lab's Elsie Entwistle interviews chemical salesman in Pearl River offices.



EXPEDITING: As manager of purchases, Mrs. Entwistle supervises a 38-man staff of buyers and expeditors.

Purchasing by the Distaff Side

When American Cyanamid's director of purchases, Harold K. LaRowe, called a special conference of his divisional purchasing executives last fortnight, sixteen men and only one woman made the trip to New York City. That lone woman was Mrs. Elsie Entwistle, representing American Cyanamid's drug-making Lederle Laboratories Div. And being the only female in a group of men was no new

experience for her. Chemical purchasing has always been a practically exclusive male preserve, but Mrs. Entwistle's career is proof that there is always room for at least one exception.

The statistics are impressive: her department at Pearl River, N.Y., handles an annual dollar volume running up to \$25 million. And her staff of 38 is organized to process 20-25,000 individual purchase orders a year. The

Lederle plant is covered by a few national contracts negotiated through the American Cyanamid headquarters, but in the main Mrs. Entwistle is responsible for everything that the division buys—from heavy equipment to animal dandruff (once used for allergics). She reports directly to Lederle's executive director, Allen Clow.

Growth: Lederle's plant and products have undergone constant change in the 30-odd years spanned by her career with the company. Buying horses (for horse serums) was a major activity when the plant's first purchasing department was formed in 1927. Now antibiotics are the single most important product—and the facilities have grown to 155 buildings—with 4,500 employees.

Mrs. Entwistle's career has matched this growth. When she first came to the plant—as a young girl just out of high school—it was to handle hypodermic needles in the supply department. From there she progressed through various administrative positions, obtaining the "purchasing agent" title in 1941.

Married to Charles Entwistle, a Pearl River contractor, she has her job at home, too. But in spite of her double tasks, she has managed to retain the friendliness and informality of small-town living—set in the vacationland scenery of Rockland County. For salesmen arriving from New York's crowded streets, this is a doubly welcome change.



INSPECTING: Packaging equipment and materials form a large part of the lab's \$25-million annual purchasing bill.



RELAXING: Like any other woman, however, Mrs. Entwistle appreciates the spare moments she can devote to home and garden.



STUDYING: And like her male P.A. counterparts, she finds that keeping up with the markets means occasional homework.

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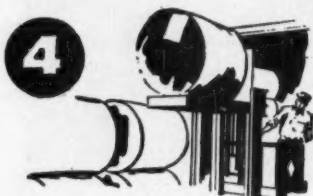
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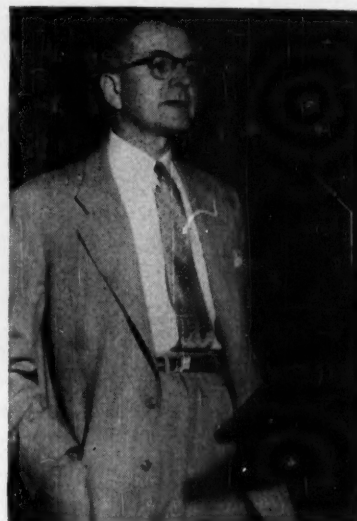
DISTRIBUTION

Maple-leaf Markets

Successful selling in Canada must depend on a realistic appraisal of the Dominion's national trade objectives, says Robinson Ord, vice-president of the Canadian Chemical & Cellulose Co.

Ord's remarks, presented to the first "international conference" of the American Marketing Assn. in Montreal last week, add up to a primer course for American companies interested in cracking the Canadian chemical market. They take on special significance because CCC is the north-of-the-border subsidiary of Celanese Corp. of America, so Ord knows whereof he speaks.

In his opinion, no American move



CANADA'S ORD: National ambitions can affect a growing market.

into Canadian markets can be successful without taking into account these three broad Canadian ambitions:

- The Dominion is intent on developing and utilizing its vast store of natural resources. Any American-fostered development that adds to this program is assured of whole-hearted Canadian support.

- But Canada wants to be sure that these resources are used mainly to build up its own primary and secondary industries.

- Corollary to this is the Canadian desire to broaden Dominion markets by export of finished goods.

The net result of these factors is to create a market that welcomes "Made in Canada" goods manufactured by U.S. subsidiaries. Conversely, they make it psychologically difficult to introduce products that tend to throttle Canada's own industrial development.

And it was for these reasons, in part, that Celanese made its decision to establish Canadian Chemical & Cellulose and to construct a cellulose acetate and textile yarn plant at bustling Edmonton, Alberta.

Thin Spread: But—as Ord was quick to explain—this doesn't mean that a Canadian manufacturing subsidiary is the whole answer to Dominion marketing problems. In fact, it makes some of them even more critical.

The size of the potential market, for instance, is frustratingly small—especially for sales managers accustomed to the vast American buying reservoir. On the surface, the ratio between the two national markets would appear to be 1 to 11. But Canada's national income is only one-sixteenth that of the U.S. And imports of completely manufactured products often reduce the real market at the industrial-chemical level to a 1-to-20 ratio.

What's more, this small market is spread over distances that equal those in America. Distribution costs climb and this raises the price for capital equipment and raw materials. Transportation problems arise from the lack of suitable truck routes and inland waterways.

One way to avoid the limitation of this market, of course, would be to plan on heavy exports. But American chemical tariffs—and currency difficulties in other parts of the world—generally make such a program impossible. Moreover, Canada's present tariff structure leaves the chemical producer vulnerable to encroachments in his own sphere. Competition in Canada is vigorous—and international.

These are the negative aspects. But on the positive side are the advantages of a stable government, a co-operative labor force, and the promise of continuing full employment.

"People have faith in the future of Canadian industry," avers Ord. This faith does not stem just from the country's ample natural resources; it is also based on "the intangibles they know are there—character, determination, stability, enthusiasm and hard work. Under these conditions, industrial growth can be a great deal faster than population growth." Participating in this growth can be well worth the multitude of problems encountered.

Steroid Shuffle

Brooklyn's Chas. Pfizer & Co. has swung rapidly up the pharmaceutical ladder of success with its single-minded emphasis on antibiotic preparations. But now Pfizer is readying a further commercial gain—this time

Here's your modern "Mortar and Pestle"
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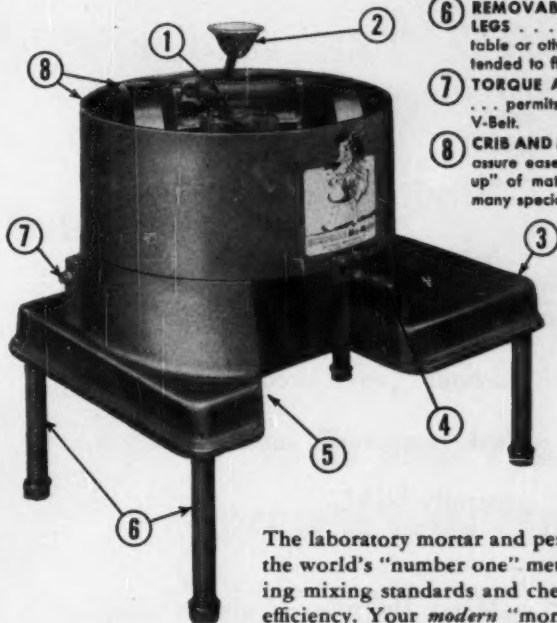
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METAL HYDRIDES

I N C O R P O R A T E D

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DISTRIBUTION

through the medium of another "wonder drug" group: the steroid hormones. The news this week is that Pfizer and the Syntex organizations of Mexico and Puerto Rico have completed arrangements for Pfizer's participation in U.S. steroid sales. It will take over the distribution functions now performed by Chemical Specialties Co., Syntex's American outlet for bulk steroids.

Moreover, the Brooklyn manufacturer will also market a line of finished-package steroids — an area in which Chemical Specialties did not operate. Pacemaker for the new products will apparently be hydrocortisone ("compound F") which is supposed to be an improvement on cortisone itself.

This teaming up with Syntex may well give Pfizer a running start over its competitors in the U.S. steroid stakes. The Mexican company's processes — starting with vegetable root sources — are reported to be much more economical than any equivalent methods developed in this country.

And from Syntex's point of view, Pfizer's extensive marketing apparatus will be a welcome addition to its large-scale production plans.

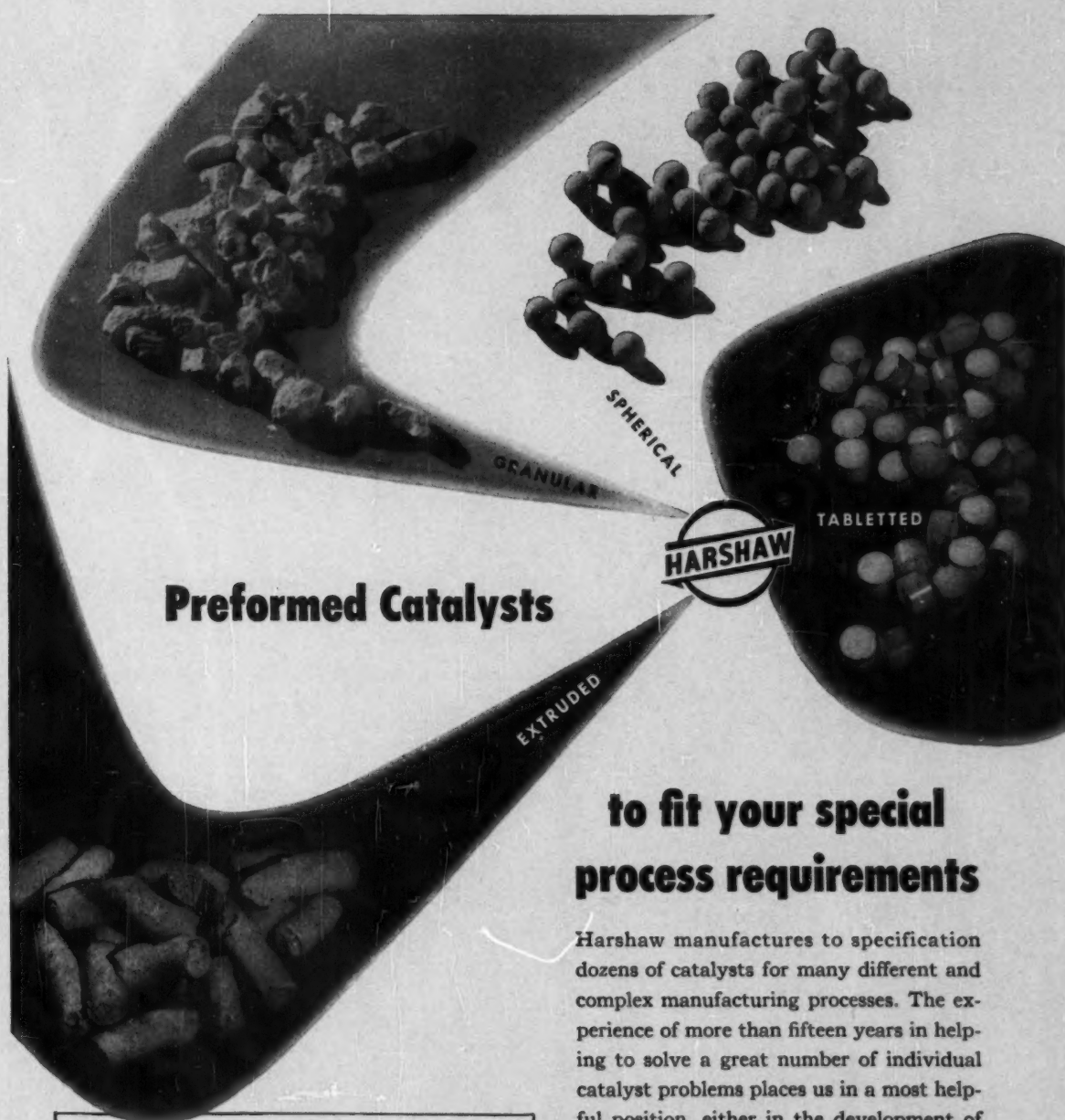
Wooring Students

Chemical market researchers and development men have been going all out this spring to foster an awareness of their professions among the limited number of new chemists and chemical engineers about to graduate from the colleges. The Chemical Market Research Assn. got across its message with a special once-a-week course at the Case Institute of Technology (CW, June 20). And this week the Commercial Chemical Development Assn. made its bid in the form of a special statement mailed to all college dailies and university engineering papers.

The pitch: commercial chemical development is "fascinating, challenging and rewarding."

Quoting CCDA President C. W. Walton of the Minnesota Mining & Manufacturing Co., the statement also described CCDA work as being "one of the best, if not the best, management training grounds available today in the chemical and chemical process industries."

Moreover, "training of personnel for commercial chemical development has normally been left to chance or to the persistence of the individual . . . but management has now started to organize long-range programs to develop the technical and business backgrounds needed for this field."



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Stabilizer 17-M (liquid) (organo-tin sulfur compounds—patents applied for)	Most powerful of organic stabilizers. Especially effective for rigids as well as for clear films and plastisols.
Stabilizer BC-12 (a co-precipitated barium-cadmium laurate)	Our most popular stabilizer, used effectively alone or in combination with our epoxy or chelating stabilizers for low cost clears or pigmented stocks.
Stabilizer CH-14 Stabilizer CH-20	Valuable anti-oxidants, used with BC-12 or C-77, or other metallic stabilizers. CH-20 especially recommended when phosphate plasticizers are present.
Stabilizer E6B	Polymeric epoxy type. Extremely useful with lead and other stabilizers. Outstanding for all chlorine containing polymers.
Stabilizer 89-X	A new development for low cost clears.

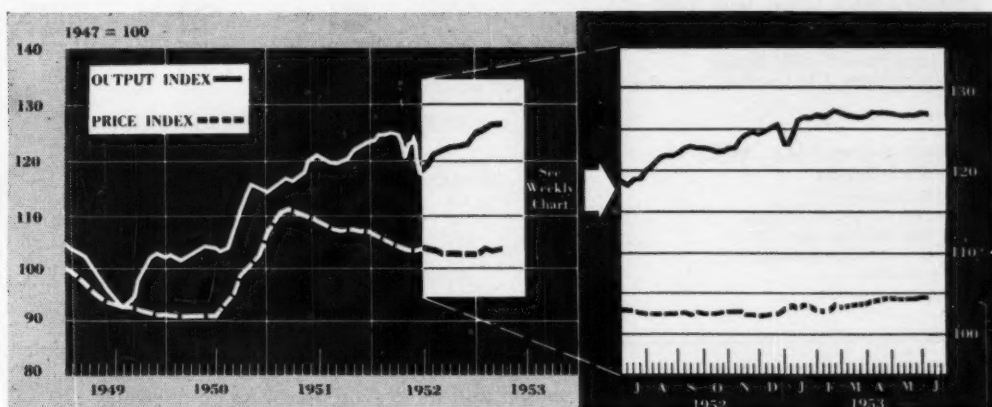
For plastisols, we have some new recommendations for general performance, as well as for non-staining. Ask for details.

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MARKETS



CW Index of Chemical Output—Basis: Total Man Hours Worked in Selected Chemical Industries
CW Price Index—Basis: Weekly Prices of Sixteen Selected Chemicals

MARKET LETTER

With vacations coming and with just three days left in June, only a few order-busy chemical buyers and sellers this week are pausing long enough to contemplate the immediate future. The looming 1953 mid-point will usher in a raft of higher prices, of course, but the impending July 1 date is also bound to bring with it some sales bubble-pricking.

Principal factor that may be reflected in any third-quarter sales slowdown is this month's rapid consumer inventory build-ups. Purchasers, trying to beat the higher price deadline, have—in some cases—as much as doubled their orders for deliveries bearing lower current tags.

And salesmen too engrossed in happily writing larger-than-usual June business, as a consequence, may soon be due for a rude awakening. For aggravating the expected "normal" summer slack, will be the absence of orders from those who stocked up before price boosts.

Sellers point out, however, that quantity-limiting clauses in most contracts lend this assurance: most customers will not stay away too long.

It's a question whether RFC will return as an alcohol customer. Scheduled originally to pick up additional material this month for its alcohol-butadiene units, it seems fairly certain the agency will forego new alcohol purchases until Sept., may not buy any even then.

Three reasons that bolster the market-shying possibility:

- Upcoming (July) shutdown of one of the government's alcohol butadiene units at Louisville (Ky.).
- Recent cancellation of one alcohol supply contract that was to furnish some 6.4 million gal. to RFC's rubber program.
- Lightening emphasis on alcohol butadiene and preeminence of petroleum butadiene as the base material for synthetic rubber output.

At the moment, alcohol producers—while understandably interested in future RFC action—are not likely to predicate production rates on any probable government buying program. Regular business is too good.

And industrial alcohol consumers are among the few chemical buyers not heading into higher third-quarter schedules. With the quarterly

MARKET LETTER

WEEKLY BUSINESS INDICATORS

	Latest Week	Preceding Week	Year Ago
CHEMICAL WEEK Output Index (1947=100)	126.2	126.3	118.5
CHEMICAL WEEK Wholesale Price Index (1947=100)	104.3	104.4	103.5
Bituminous Coal Production (daily average, 1,000 tons)	1,500.0	1,605.0	1,208.0
Steel Ingot Production (1,000 tons)	2,235.0(est.)	2,183.0	
Stock Price Index of 13 Chemical Companies (Standard & Poor's Corp.)	239.2	236.5	245.6

MONTHLY INDICATORS—Trade (Million Dollars)

	MANUFACTURERS' SALES			MANUFACTURERS' INVENTORIES		
	Latest Month	Preceding Month	Year Ago	Latest Month	Preceding Month	Year Ago
All Manufacturing	26,709	25,469	23,538	44,256	44,056	43,402
Chemicals and allied products	1,797	1,767	1,573	2,892	2,907	2,986
Paper and allied products	709	718	633	989	990	1,059
Petroleum and coal products	2,191	2,067	2,028	2,748	2,726	2,628
Textile products	1,251	1,127	1,244	2,628	2,597	2,779
Leather and products	302	292	261	573	553	582

revision date (June 15) safely passed and no higher price announcements posted, contract customers will continue paying these rather stable rates for another three months at least: ethyl alcohol (190 proof), a steady 48¢/gal. base; acetone, 81½¢/lb.; ethyl acetate (85-88%), 11¢.

The butyls, too, are firm: for the acetate and butyl alcohol 13¢/lb. (All prices are tank quantities.)

At least one chemical intermediate will also remain at present levels despite the general price bumping due next week. Flake beta-naphthol will not be boosted above the current 32½¢/lb. (c.l.), although the powdered will edge up 2¢/lb.

Other intermediate hikes in sight: anthraquinone, 3¢/lb. (to 88¢, c.l.); chlorosulfonic acid, ¾¢/lb.; acetanilid, 2½¢/lb. (tech.); anilin, 2¢.

But the biggest splash in the market-price pool will be made by the pending aromatic hydrocarbon increases. Toluene—long in a tight supply position because of the government's TNT and avgas needs—is scheduled for a leading petro-producer's 2¢/gal. jump July 1. A second supplier has just about decided to follow suit.

Xylol, other aromatics (with one probable exception) will likewise jump 2¢/gal. As of the moment, no immediate change is contemplated for the benzene tag. Reason: supply, boosted with imported material, is relatively good.

The aliphatics, too, will be riding this wave of increases. Expected hop: 1¢/gal. across the board.

Phthalic anhydride market conditions may soon brighten. Loss of a major producer's supply contribution—due to a now nearly three-month-old strike—has other domestic suppliers working at capacity levels trying to take care of pressing alkyd resins and plasticizer demands.

Indeed, one producer is reluctantly turning away sales, accepting no new orders for July.

Some relief is in sight in spite of the strike, however, as Barrett's soon-to-be-producing Chicago plant helps ease the phthalic pinch.

SELECTED CHEMICAL MARKET PRICE CHANGES—Week Ending June 22, 1953

DOWN

	Change	New Price		Change	New Price
Carbinol, methylisobutyl tanks, divd.	\$.005	\$.13	Oil, linseed, tank cars, f.o.b., Minneapolis	\$.005	\$.142
Iodine, crude, Chilean, kegs	.74	1.30	Tallow, inedible, No. 1 tanks, divd.	.00125	.035

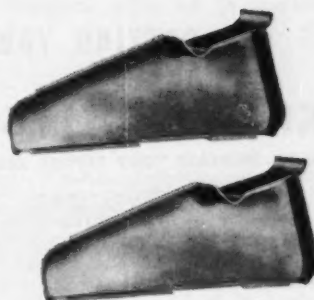
All prices per pound unless quantity is stated.



Where would the price of pork be if hog cholera continued to destroy millions of pigs? It has done that since its discovery 120 years ago. One infected pig could destroy a herd of 1000. Hog cholera serum, developed during the last decade, and largely made on Stokes Freeze-drying equipment, is eliminating the scourge of hog cholera from the world's stock farms. The same type of Stokes equipment is used in the preparation of "wonder drugs" which daily save the lives of thousands of humans.



What converts the dull two-cent slush-metal casting to the brilliant piece of costume jewelry? Just three millionths of an inch of aluminum! It vaporizes under vacuum, deposits itself on the dull surface, and the ugly duckling becomes a sparkling decoration. Low-cost molded plastic is also used as a base. Over the aluminum is applied a lacquer coating. With this alone, the aluminum looks like brilliant silver; the top-coat can also be dyed in colors which simulate silver, gold, copper, selenium or other metals.



What is the difference between these two seemingly identical castings? One will leak; one will not. Both have tiny pores which often occur in casting but are quite invisible to the eye. But one of these castings has been impregnated with a sealing compound in Stokes Vacuum Impregnating equipment. When the compound has hardened, the casting is proof against heat and pressure. Many manufacturers are eliminating the cost of rejected castings by vacuum-impregnating all castings without test.



Many watch-springs are now annealed in vacuum to modify surface characteristics of the metal, and improve mechanical properties. The process also offers great economies over treatment in controlled, or inert, atmosphere. Similarly titanium and zirconium sheet and bar stock must be annealed in vacuum. Indeed, these metals, after ores are reduced to oxides, must be handled almost entirely under vacuum until they reach finished shape. In the presence of air, they tend to combine with the material of the vessels in which they are processed.

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MARKETS



FORMULATOR SMITH: Sees plastisols weaning away rubber-product customers, as vinyl resin toys hit a "growing" market.

Rubber-Plastisol Squeeze

It's not likely that the little four-year-old "mother," cuddling her dolls, or the baby in the play-pen happily chewing on his bright-colored "Penny Penguin" squeeze toy, would think about chemical markets in conjunction with the prized possessions; but one segment of of the chemical process industries is vitally concerned about the materials being used by toy makers.

Shaping up this week is evidence pointing to the growing competition between rubber and the newer vinyl plastisols for the estimated \$10-15 million/year squeezable doll business. Plus, of course, a host of other possibilities ranging from the bulb on an eyedropper to five-gallon gasoline containers.

If hollow vinyl resin products continue their skyrocketing sales spiral in the doll field alone, it's a sure bet that rubber will suffer another market-losing wallop from "plastics"—and this one could amount to a hefty 25-30 million lbs./year.

One interesting sidelight: the competition is not confined to the usual

company vs company scramble. In some instances, toy manufacturers are seeing their plastisol departments successfully weaning customers away from their rubber products sections. Tom Smith (*see cut*), president of Sun Rubber Co. (Barberton, O.) points out that there is much to recommend the vinyl resin over the molded rubber items. (Sun Rubber, like many toy makers in this field, does its own formulating, adding plasticizers, extenders, etc., to a vinyl resin paste to make up its plastisol—the liquid molding mixture.)

Some rock-hard economic plastisol encomiums:

- Labor costs incurred run three to four times under those for the molded rubber articles.
- Equipment and raw material investments are considerably less.
- Shapes impossible to produce in rubber are a cinch for the resin material.

Plastics Plunge: Sun Rubber, long-time rubber products producer, entered the dolls and toys field via a desperation gimmick back in 1929. Unable at the time to sell any of its regular line of rubber goods, entre-

* Among other market-battle arenas: Flooring, rainwear, inflatable beach playthings, garden equipment.

preneur Smith made up a doll-size rubber hot water bottle, attached it to a limerick-imprinted card and succeeded in placing it in a nationwide system of variety stores.

From that long-shot payoff, it was a short step to the production of rubber dolls. These were turned out in six parts, then assembled, decorated and dressed.

After snaring the rights to turn out rubber reproductions of Walt Disney's movie characters—as well as a number of other figures—Smith ran up against a drive-stopping problem: Sun Rubber was spending a lot of money for steel molds in which to produce the dolls, yet it was impossible to get life-like facial and contour details. The problem lickster proved to be plastisol.

The vinyl resin liquid turns out, in one piece vs the previous six, a toy of much better texture and with every feature and contour of the mold faithfully executed.

Since then the company has expanded its line, now also makes nursery-size wheel toys, footballs and baseballs.

Patent Frowns: But if Sun Rubber is bringing joy to small fry, it is also frowning brows of some other hollow plastisol producers. Two patents recently granted the Midwest manufacturer are being eyed by the trade with a mixture of envy and hostility. One is for a method of making the vinyl resins articles in a closed-cavity-mold casting; the other covers apparatus to do that kind of plastic casting.

Point of contention raised by not a few of the 30 or 40 plastisol toy makers is that Sun Rubber's process and the rotational casting machine are seemingly similar to some already in use. At least one competitor flatly avers that the patents aren't worth the paper they're written on, supports his contention by the fact no established fabricator (as far as he knows) has accepted Smith's license offer.

Regardless of trade cross-currents, however, mass-production rotational casting of one sort or another bids fair to supplant conventional slush molding methods. The latter, briefly, consists of pouring the liquid mixture into a mold, heating just long enough to allow the proper amount of the raw material to gel against the inside, then pouring out the excess liquid. The quantity adhering to the mold is retained and fused.

Slush molding, obviously, is not an ideal method. Economy-minded molders are the first to point out that the lack of rigid control over the build-up process often means using a more-than-needed amount of plastisol. Result: waste and a thicker-than-necessary toy.

The automatic rotational casting machine—three of which are currently turning out Sun Rubber's 25-30,000



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MARKETS

11-inch-long dolls a day—may well open up the entire field of hollow products to plastisol. Biggest recommendations: the vinyl material is measured into the mold; and while the mold is quickly heated, it is turned in a multiplicity of planes to distribute the plastic evenly and completely on the inner surface of the mold.

Burgeoning Outlook: At the moment, Sun Rubber's vinyl products make up about 30% of the firm's annual production, will hit 50% within a few months.

While all squeeze toy makers are not switching from rubber to vinyl resins, some, like Molded Latex Products (Paterson, N.J.) rated among the

world's top manufacturers of vinyl doll parts, have long since passed that 50% plastic-production mark. The latex pioneer, however, does not see rubber being squeezed completely out of the toy market, feels the older material will continue to have the edge in larger toys.

But there's no doubt that vinyl plastisols are tops for colorful, soft and realistic-to-touch dolls and toys that won't fade nor—important where youngsters are involved—be damaged if sterilized in boiling water. And with three and a half million babies born in the U.S. each year, the market—as producers punningly point out—is certainly a growing one.

Alkaline Gulf Stream

Teamed with a fast-running chlorine market, caustic soda is being pressed for more outlets.

Rising production, thin local trade intensify caustic disposal problem for Gulf Coast region.

Consultant Tonn's solution: court local and foreign customers, make chlorine without caustic.

Columbia-Southern Chemical last week disclosed it was going onstream with more chlorine and caustic soda at its Natrium, W. Va., and Corpus Christi, Tex., plants. This latest industry increase will presumably add several hundred tons daily to the country's expanding chlorine supply.

Unfortunately, hand in hand with the wanted chlorine will pour forth a slightly greater quantity of not-so-eagerly-sought-after caustic soda.

Down in the Gulf Coast region, the growing imbalance of chlorine vs caustic demands (CW, Apr. 4) is an especially live issue. This week Consultant William H. Tonn, Jr., apprised CW of just how critical the caustic soda situation could become.

Bill Tonn's recent study of caustic soda in the Southwest points up these observations:

- Production of caustic soda in the Gulf Coast area is now approaching half the entire U.S. output.

- Potential production capacity in the region could probably account for as much as 61% of total output.

- In sharp contrast with the producers' record, consumers along the Gulf Coast take a mere 12% of the output of their own area. The remainder of the caustic soda must be disposed of elsewhere.

- The rate of increase in chlorine consumption is roughly twice as great as for co-product caustic soda. Resulting outlook: the problem of overproduction and disposal of caustic will become evermore urgent as the demand for chlorine balloons.

- Because each unit of chlorine manufactured by the electrolytic process simultaneously turns out 1.125

Caustic Soda Consumption Pattern in Gulf Coast Region

Industry	Tons per Year	Per Cent
Petroleum refining	127,800	71
Chemicals	18,000	10
Redistribution	7,200	4
Synthetic rubber	5,400	3
Creameries, Bottlers, Breweries	5,400	3
Miscellaneous	5,400	3
Textiles	3,600	2
Soap	3,600	2
Paper and pulp	1,800	1
Vegetable oil refining	1,800	1
Totals	180,000	100



TONN: His figures pinpoint a caustic concentration.

units of co-product caustic, top-heavy demand for the former aggravates, in view of this unfavorable chlorine/caustic production ratio, the supply surplus of the latter.

High Concentration: As detailed by Tonn, 1,475,000 tons/year of caustic soda pours from the cells of a dozen companies in the area.

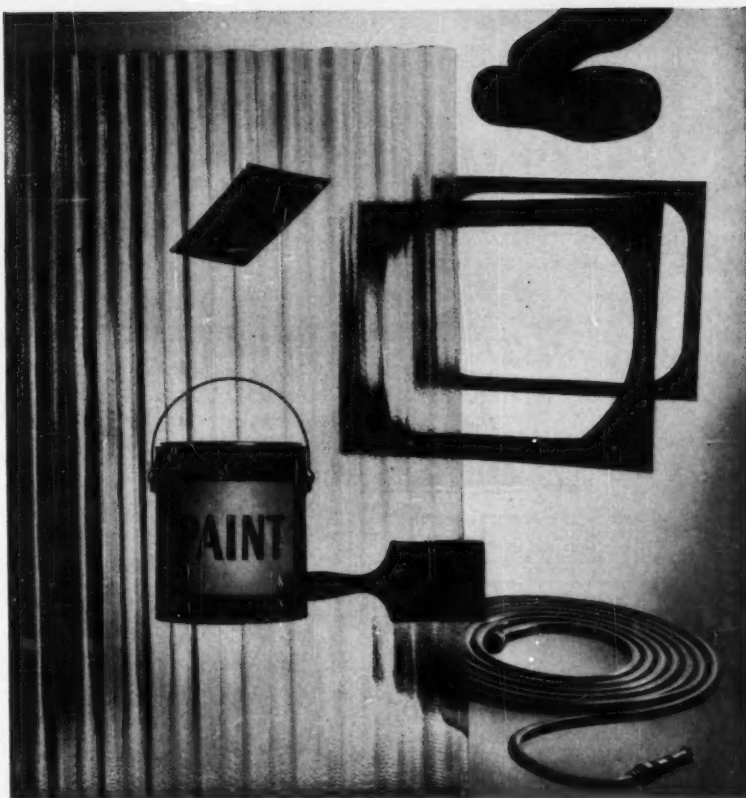
Pinpointing the producers even further: approximately 1,150,000 tons annual capacity (nearly one-third the entire country's) is concentrated in an almost direct 450-mile line extending from Solvay's Baton Rouge, La., plant to Columbia-Southern's cells at Corpus Christi, Tex. (*see map*).

Few Takers: The market for caustic in the Southwest is dominated, as are most other operations, by one principal industry: petroleum. Of the 180,000 tons of caustic soda now absorbed locally, 127,800 tons (71%) according to Tonn's figures, is consumed in various steps of petroleum refining. (*For a complete estimated breakdown of end uses see table.*)

The Gulf Coast caustic soda consumption pattern is in sharp contrast to the over-all national picture. One estimate ranks the top four U.S. consumers this way:

Industry	Per cent of total consumption
Chemical manufacturing	26.7
Rayon and film	23.6
Petroleum refining	8.6
Paper and pulp	7.3

The continually expanding refining capacity will, of course, draw off increasing amount of caustic. The catch is, petroleum expansion will probably not keep pace with the swift-running chlorine market. Tonn estimates that an increase in petroleum feed stock of 1,000 bbls./day will add a mere 25



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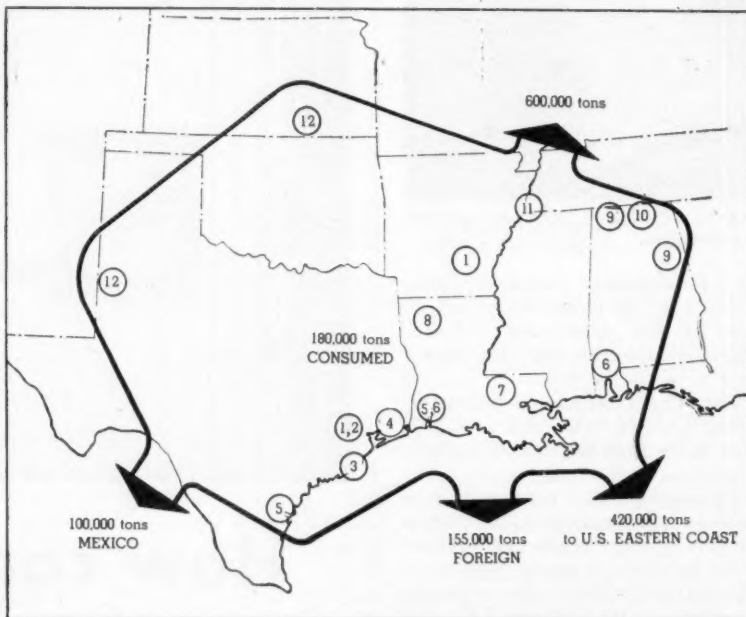
Chemical Week

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MARKETS

Caustic Soda Plants in Gulf Coast Region

1. Diamond Alkali Co. — Pasadena, Tex.; Pine Bluff, Ark.
2. Champion Paper and Fibre Co. — Pasadena, Tex.
3. Dow Chemical Company — Freeport, Tex.; Velasco, Tex.
4. Gulf Oil Corp. — Port Arthur, Tex.
5. Columbia-Southern Chemical Co. — Corpus Christi, Tex.; Lake Charles, La.
6. Mathieson Chemical Co. — Lake Charles, La.; McIntosh, Ala.
7. Solvay Process Corp. — Baton Rouge, La.
8. Southern Advance Bag Corp. — Hodge, La.
9. Monsanto Chemical Co. — Muscle Shoals, Ala.; Anniston, Ala.
10. Algonquin Chemical Co. (National Distillers) — Huntsville, Ala.
11. Arvey Corp. — Memphis, Tenn.
12. Frontier Chemical Co. — Denver City, Tex.; Wichita, Kan.



CAUSTIC SODA: Call for chlorine brings more a-running.

tons/year to the oil refiners' caustic appetite.

Over Land and Sea: With the largest consumers located outside the Gulf Coast, caustic makers find that shipping operations play a major role in disposing of their product.

The 1,295,000 tons made but not consumed locally leave the area by several routes:

- Almost half (600,000 tons) is barged up the Mississippi River. Rail shipments to the Midwest are insignificant. Reason: low-price caustic soda can't bridge the difference in rates. Typical gap: 50% liquid caustic (the usual form) bears a Houston-to-Chicago rail rate of \$25.08/ton versus a barge rate of \$7.86/ton.

- Coastwise shipments via barge and ocean-going vessels account for 420,000 tons. These loads are bound for points well up the Atlantic seaboard. And despite the much greater water distance, the steamer rate from Houston to New York, for example, is only \$22.04/ton compared with rail costs of \$32.66/ton (for 50% liquid).

- Because of proximity, a sizable

amount (over 100,000 tons) can be and is shipped to Mexico by rail. However, sale of large quantities to that country is limited by government regulations.

- Also steaming out are some 155,000 tons bound for other foreign countries.

Time For Action: "Sooner or later," warns Tonn, "there will be an overproduction of caustic soda if the present trend continues."

The Gulf Coast producers, with their highly concentrated output, are obviously in position to observe the rising tide at an early date. Just what can they do if and when the flood comes?

They have at least three courses of action, counsels Tonn. They can:

- Encourage foreign markets by expanding on a long-term sales basis.

- Manufacture chlorine via a process not producing caustic soda.

- Make a positive effort to bring in new local customers; big takers, such as rayon, film, or pulp and paper makers, would be especially welcome.

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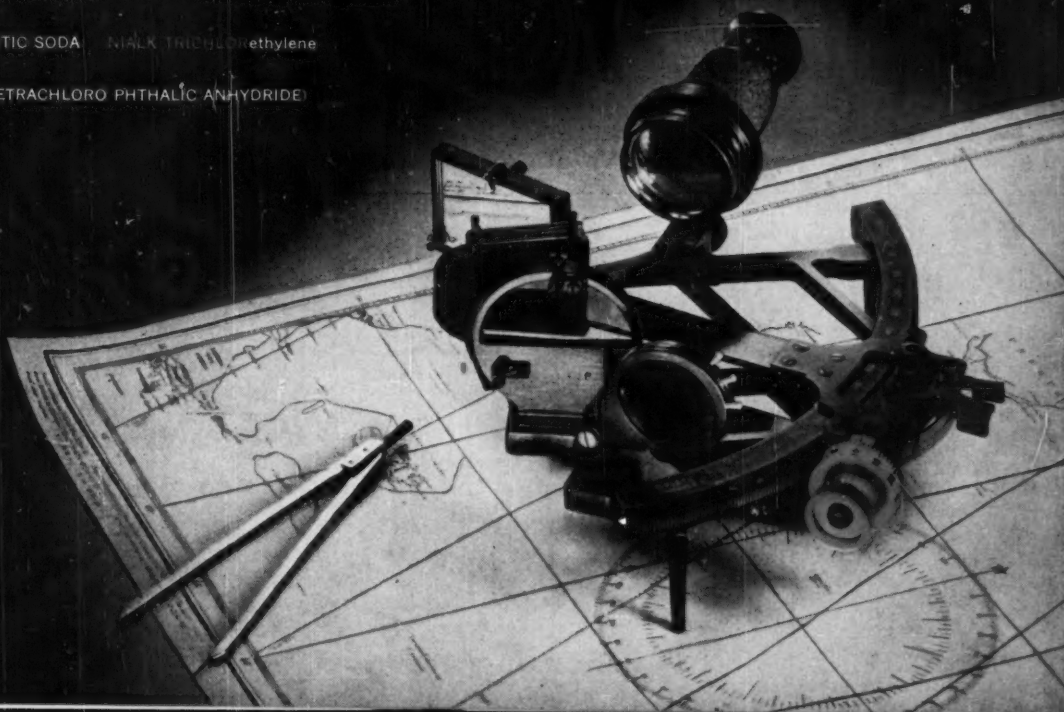


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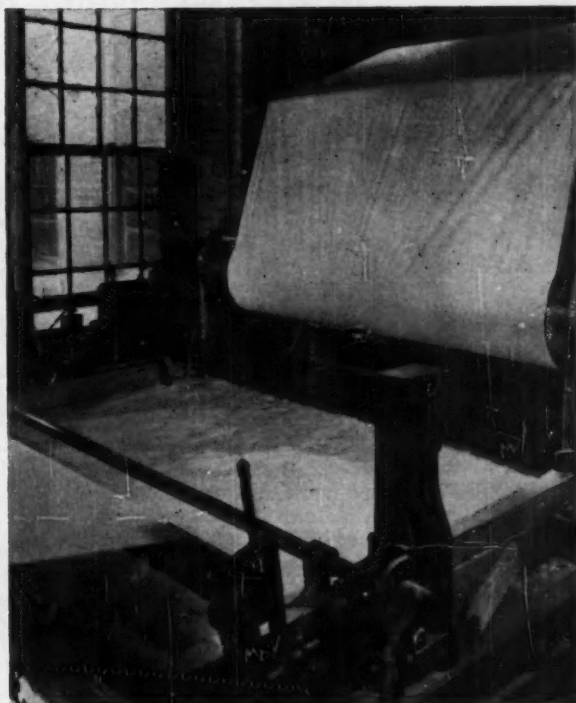


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Holding Down the Foam

Though foam's a broad industry problem, defoaming compounds still rate as sales stepchildren.

There's nothing approaching a cure-all—but 2-ethyl hexanol, tributyl phosphate, and silicones are among top foam-quenchers.

Food industry looks like a major outlet, with still-unsolved problems. As yet, only a silicone has full FDA approval.

Aside from the movie industry, which has made something mighty nice out of the bubble bath, few industries have found foam anything but a problem. And today, despite the increasing attention given to ways of subduing froth, chemicals that can accomplish it are still somewhat of a sales sideline.

Perhaps responsible for this attitude has been the difficulty in determining the size of the market for antifoamers—even firms most interested in broadening outlets for their products are reluctant to put forth a guess as to the potential. Largely, this is due to a couple of facts: though the need is vast, no firm has any assurance that its products can be widely applicable, and the quantities of the foam-quencher required for a particular job are generally trifling compared to other outlets.

It adds up to a situation where few firms can send salesmen around simply

to sell antifoamers; and few can maintain a lab to uncover defoaming potentialities of their products. Currently, most stick to a policy of "reminder" ads, devised to point out from time to time that certain foam problems—maybe similar to yours—have been solved.

But there are still some firms actively pushing antifoamers. One of the new gadgets that permits industry to try froth-stopper conveniently is Dow Corning's aerosol unit containing Anti-foam A. In lab or pilot plant, a touch of the button determines if the silicone will do the trick.

Outgo Growth: And industry has found that there are a number of tricks that bubble-quellers can do. Today production of a number of volume products is closely dependent on the use of antifoamers. Antifoam specialists are reluctant to make a firm list, but the textile industry (kier boiling), the paint industry (resin making, and in latex base paints), the pro-

duction of steam for almost any industry, and high-detergency motor oils demand the anti-frothers—but the list is virtually endless. Defoamers even find application in vet medicine—a cow that has become bloated from overeating green clover can be eased by a dose of silicone.

The diversity of application has demanded a diversity of products, and it is difficult to pinpoint products most widely used. Probably most widely employed are higher alcohols like 2-ethyl-hexanol and diisobutyl carbinol (both Carbide and Carbon Chemicals Corp. products), and tributyl phosphate (Commercial Solvents Corp.). Silicones have become a major factor, but there are no firm figures on consumption for defoaming purposes of any products.

Bubble Troubles: A firm with a foam problem must frequently work out a solution for itself. In many cases, companies have devised and patented their own defoaming ideas—some mechanical, and some making use of a chemical. Or they can work with firms that offer defoamers.

Another approach might be to call in a researcher who has specialized in studies of foam. Such an expert is Sidney Ross (Rensselaer Polytechnic Institute, Troy, N.Y.). Ross has dealt with a variety of foam situations, probably knows as much about them as anyone.

Besides knowing most of the cases



Tall Tale

Take Paul Bunyan now, he was born to do big things. Outgrew his first cradle in a week, and his second an' third before they was even finished. Finally put him in a twenty-foot trough his old man built overnight and anchored off Kittery Point. But Paul got restless out there and rocked so hard he made a tidal wave that swamped towns from Bath to Bangor. Hearin' folks talking about what to do with him, Paul wades ashore and disappears into the tall timber, wearing his cradle like a cap.

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Tall Tales and Fabulous Facts

Like the tall tales our ancestors told to make the dark forests and endless plains seem less overwhelming, silicones happily resolve complex problems in design, production and maintenance.

where foaming has been licked, Ross can point to areas where it still needs further attention. A top field for future research is the food industry. At present, only one product, DC Anti-foam A, has been thoroughly tested by the Food & Drug Administration—it is ruled safe in concentration up to 10 parts per million. Otherwise, the FDA has had no defoamer called to its attention for approval. Under present regulations, FDA can halt use of additives only on a direct court order after a product has been seized in interstate commerce.

Multiple Approaches: In choosing a defoamer, cost, concentration, and persistency are prime considerations. Cost has been a major deterrent in use of silicones. Although used in exceedingly small concentrations, their cost (\$3-4/lb.) makes it hard for them to compete in some cases with compounds that cost a fraction of a dollar.

In broad outline, defoamers can be examined by type.

Certainly among the most widely used are higher alcohols. Octyl alcohol and nonyl alcohol (Carbide and Carbon Corp.'s 2-ethyl hexanol and diisobutyl carbinol) are effective, alone or sometimes in combination, for defoaming where waste sulfuric acid is neutralized with calcium carbonate. They are also used in the paper industry, and in manufacture of printing inks and glues. Amyl and caprylic alcohols, and some polyalkyl glycols and their derivatives are also used.

Fermentation processes, yeast manufacture, and production of penicillin often make use of fats and fatty acids. Nopco Vegifac Y (Nopco Chemical Co., Harrison, N.J.) typifies an effective mixture of long- and short-chain fatty acids. Milk sugar production demands a defoamer on the order of fatty acid esters—like Atlas Powder Co.'s Span 20 (sorbitan monolaurate). Both Nopco and Atlas offer other fatty acid defoamers, or esters, as does Glyco Products Co. Inc. (Brooklyn, N.Y.).

Boiler-water foaming, a bother in nearly every industry using high-pressure steam, has provided a growing market for Dearborn Chemical Co.'s (Chicago) Anti-Foams, which are essentially high molecular weight alkene polyamides. Stearamide was the compound that pointed to potentialities for the polyamides, chemicals that have found use in manufacture of paper stock, glue, starch and casein solutions as well as in boiler waters.

Effective Eight: Glycols with at least eight carbon atoms, and their hydroxyl ethers have been used as



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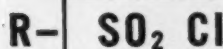
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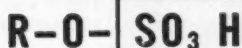
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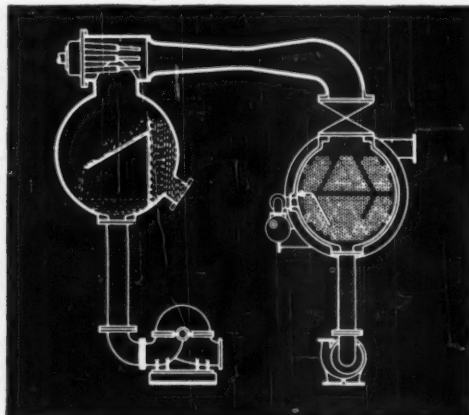
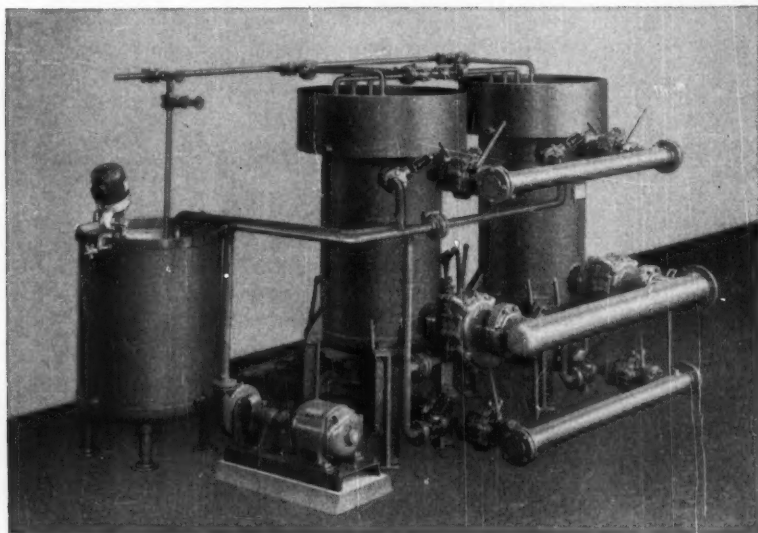
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foam-quenchers in textile processing, in cleaning machines using alkalis, phosphates, silicates or soaps; in pulp and paper manufacture; boiler water; sewage disposal plants—in just about as many applications as any single class of compounds. Wyandotte sells two such products, Foamacide L and A (basically di-tertiary amylphenoxy-ethanol).

Related to the ethers are the oxazones; Commercial Solvents Corp.'s Alkaterges fit in this classification, and, with mineral oil, have been used in defoaming penicillin fermentation tanks.

Commercial Solvents' tributyl phosphate is the largest selling of the phosphate defoamers—for use in latex base paints, for example. But Victor Chemical Works' sodium octyl phosphate and Carbide and Carbon Chemical's trioctyl phosphate compete in many areas.

In aqueous systems, metallic soaps have proved effective. Nopco's 1333 and 1497, aluminum stearates, are typical of the antifoamers based on the palmitates and stearates of aluminum, calcium, magnesium, etc. They have application in paper making and and glue manufacture, etc.

Among the newest compounds to make a name as antifoamers are the silicones. Dow Corning offers its Anti-foam A; General Electric has four defoamers, Linde Air Products (subsidiary of Union Carbide and Carbon Corp.) sells its X-12. Plaskon has not yet entered the field.

The silicones have proved widely applicable. Cost has been a drawback—nevertheless, the silicones have turned up as froth-killers in high-detergency motor oils, in the manufacture of phenolics, in paints, and some distillation processes.

Drop in the Bucket: Concentration of the defoamer depends on product and application. They are generally used in very small amounts, a few parts per million or a fractional percentage. Occasionally they are used up to 2% by weight. But even 2% is a discouragingly small volume outlet, one that is often further narrowed by difficulties in evenly dispersing the antifoamer. Where only a few parts per million of the defoaming agent are required, it is frequently put in a liquid carrier, which can be easily added to the troublesome foam.

All these complications help stretch the list of antifoamers—a list that seems long even when sketched lightly. But industry experts agree that the list will be a lot longer before all foam problems are whipped.

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N-34

FOR MORE INFORMATION CONTACT **Industrial Development Department**
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CHEMICAL WEEK

330 W. 42nd St., N.Y. 36, N.Y.

SPECIALTIES

Polyethylene Treat

The advantages of polyethylene for packaging—its inertness, toughness, and flexibility—are also its greatest disadvantages, at least to printers. But keeping pace with the facilities expansion for polyethylene production are the firms that convert and print polyethylene film.

Newest process for making inks adhere to the films is a surface treatment worked out by Chester Packaging Products Corp. (Yonkers, N.Y.). The firm will say little about its process, which involves oxidizing the surface to be printed, and which the firm figures is safer unpatented.

Films treated with the Chester process (termed Cheslene TF films) can be printed on ordinary flexographic process presses, though the flexibility and stretchability of the films somewhat limits the ink choice.

Chester does not intend to let others use its process; firms desiring to make use of Cheslene TF will have to buy the treated film from Chester.

For All That Glitters

Back-to-liquid trend in glass cleaners (CW, Apr. 28, '51) has been getting a boost lately from aerosol-dispensed products.

Couple of the recent products to utilize the convenience appeal of the pressurized containers are Sprayway Glass Cleaner made by Tru-Pine Co. (Chicago) and Champagne, Spee-Dee Home Products' Div. of DeMert & Dougherty, Inc. (Aeropak, Chicago). Tru-Pine hit the stores with Sprayway last August; DeMert & Dougherty is just now breaking in its Champagne in Chicago. Already a number of other packers are probing the possibilities of the cleaners.

They're aiming at a market they estimate at around \$13-14 million, figure they can offer a number of advantages over the common "wax" or liquid types. Top points in their sales bid are those that liquid makers have stressed—the spray is dustfree and doesn't require hard rubbing. To that the aerosols have added a "no pumping, no pouring, no dripping" pitch, as well as underlining that the can won't leak nor break.

The new products are recommended for more than just glass-enameled appliances, tile and porcelain can be cleaned, too. DeMert & Dougherty says its 79¢ container polishes 100 windows and appliances.

Success Recipe: Just what goes into these cleaners, the makers hesitate to say. Tru-Pine admits to about 15% Freon or Genetron, the rest a mixture

of ethanol and water. DeMert & Dougherty claims a new detergent it calls Cryston. Both firms declare that there is no ammonia in their formulations.

Of the competitive items, most of the liquid cleaners consist of a water-solvent mixture—alcohol, like iso propanol or Cellosolve—plus a synthetic detergent or soap, alkali or other detergent. "Wax" types generally contain diatomaceous earth, bentonite clay, isopropanol, or Cellosolve, ammonia, emulsifying agents and water.

Tru-Pine's formulation demands that it be pressure-filled through the valve, but DeMert & Dougherty won't talk about its filling setup for Champagne just now. However the filling's to be done, the potential in glass cleaners looks good, and chances are there will soon be more on the market.

Built-in Parasol

Popularity of bleached-wood furniture has been accompanied by a pair of problems: sometimes the wood darkens; sometimes the finish darkens. To halt wood darkening, Hercules Powder Co. suggests incorporating ultraviolet absorbers in nitrocellulose lacquers.

The sun-screens Hercules chemists use are Antara Chemicals' Uvinul 400 and 490. About 0.5% Uvinul on a lacquer solids basis gives good protection with a majority of woods by preventing the sunlight-catalyzed surface action.

As described in a recent brochure, the tests run by Hercules consisted of exposing panels of lacquered wood to Florida sun (filtered by glass, as would be room furniture) for 15 days. Some woods—white oak, and black walnut—tend to bleach; the absorbers won't affect this.

The u.v. screeners, substituted benzophenones, were also tried in lacquers at elevated temperatures to determine their stability under conditions of hot spraying (170 F). Efficiency of the absorber was not generally decreased by the higher temperatures, although prolonged heating appeared to damage both screener and lacquer.

After-Work Wash-Up: Buckeye Products Co. (Cincinnati) is test-marketing a waterless hand cleaner in Dayton. For mechanics, machine operators, it contains hexachlorophene and lanolin in addition to detergent. Sold for \$2.50/gal. in drums, it is dispensed from a polyethylene unit.

Soap Standards: The American Society for Testing Materials is now offering

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SPECIALTIES

the '53 edition of its ASTM Standards on Soaps and Other Detergents.

Included in the compilation are seventeen specifications for many soaps and soap products, nine "specs" for special detergents, and nine methods of analysis. The booklet sells for \$2.25.

The Society is also offering its ASTM Symposium on Statistical Methods for Detergent Laboratories. Price is \$1.25.

Both papers may be obtained from the Society, 1916 Race St. Philadelphia 3, Pa.

Puritan's Progress: With sales in '53 better than 23% higher than in a comparable period in '52, Puritan Chemical Co. (Atlanta, Ga.) has decided to expand facilities, will enlarge the laboratory and offices at its specialties plant.

Hardy Rollers: Heavy-duty paint rollers are now offered by American Products Co. (New York). The high-pile lambs' wool rollers are built around phenolic-coated paper cores, which are said to be resistant to solvents, thinners and paints. Rollers are sold in 9-, 14- and 18-inch widths.

Tempered Pitch: To give makers of liquid fertilizers and their advertising agencies help in preparing accurate promotion copy, the National Better Business Bureau has recently issued a new brochure.

After checking with authorities in state and federal agriculture experiment stations, the NBB advises:

- Be cautious in claims of "super"-strength soluble fertilizers. Although they may be more concentrated when packed, they are generally diluted before use.

- Be discreet in talking of the benefits of using trace elements. To be avoided are exaggerated claims of plants "starving" from lack of the minor elements.

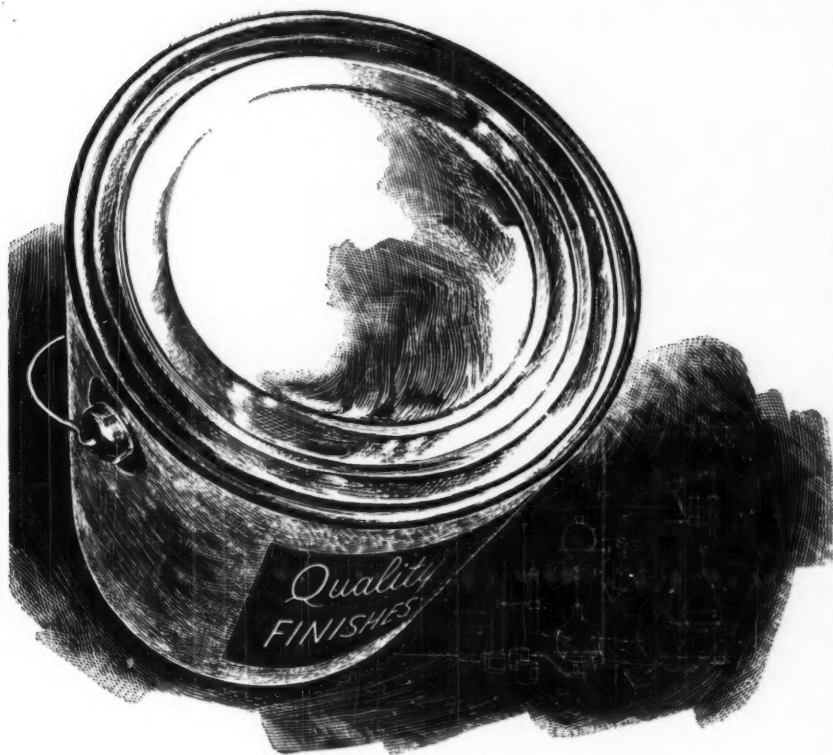
- Don't imply that radioactive compounds (used to show how quickly plant foods are distributed throughout the plant) are present in the material as it is sold in stores.

- Don't overstress the importance of rapid absorption; there is no evidence that speed is always a benefit.

- Keep away from implications that the results obtained in hydroponic gardening will be duplicated in every garden.

- Don't overplay the importance of hormones and vitamins in fertilizer formulations.

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LINOLEUM: BECKOSOL alkyd resins and PENTACITE pentaerythritol resins (for linoleum coatings); RCI inorganic chemical pigment colors.

PAINTS, VARNISHES AND LACQUERS: BECKACITE (1) fumaric, (2) maleic and (3) modified phenolic resins; BECKAMINE urea-formaldehyde resins; BECKOLIN synthetic oils; BECKOPOL modified phenolic resins; BECKOSOL (1) phenolated, (2) phthalic-free, (3) rosin modified, (4) pure drying and (5) pure non-drying alkyd resins; KOPOL processed Congo copals; PENTACITE pentaerythritol resins; STY-RESOL styrenated alkyd resins; SUPER-BECKACITE pure phenolic resins; SYNTH-COPAL ester gums; WALLKYD pure drying alkyd resins (for alkyd flat wall vehicles); WALLPOL vinyl-type copolymer latex emulsions (for latex flat wall coatings); RCI inorganic chemical pigment colors.

PAPER: BECKAMINE urea-formaldehyde resins (for adding wet strength, improving the wet rub of starch-clay coatings, and waterproofing starch adhesives); RCI inorganic chemical pigment colors (for paper coloring); STYRESOL styrenated alkyd resins (for paper coating).

PRINTING INKS: BECKACITE fumaric, maleic and modified phenolic resins; BECKOLIN synthetic oils; BECKOPOL modified phenolic resins; RCI inorganic chemical pigment colors.

TYPEWRITER RIBBONS: RCI inorganic chemical pigment colors.

WAXES AND POLISHES: BECKACITE modified maleic resins; SUPER-BECKACITE pure phenolic resins; SYNTH-COPAL ester gums.



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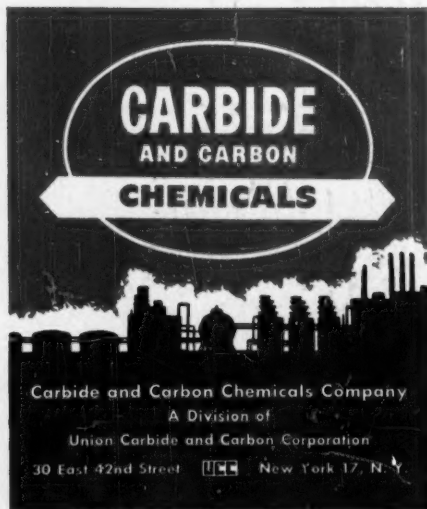
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